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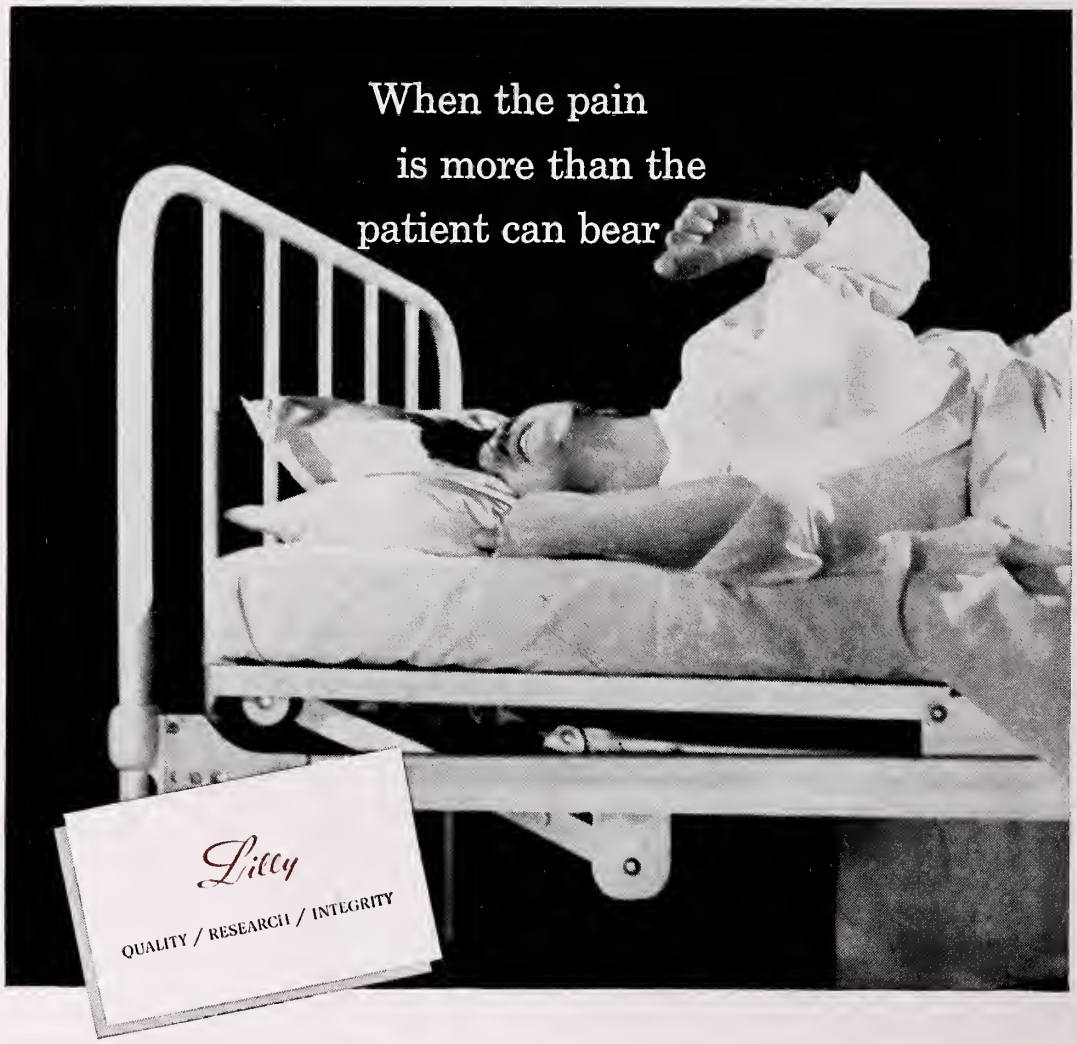
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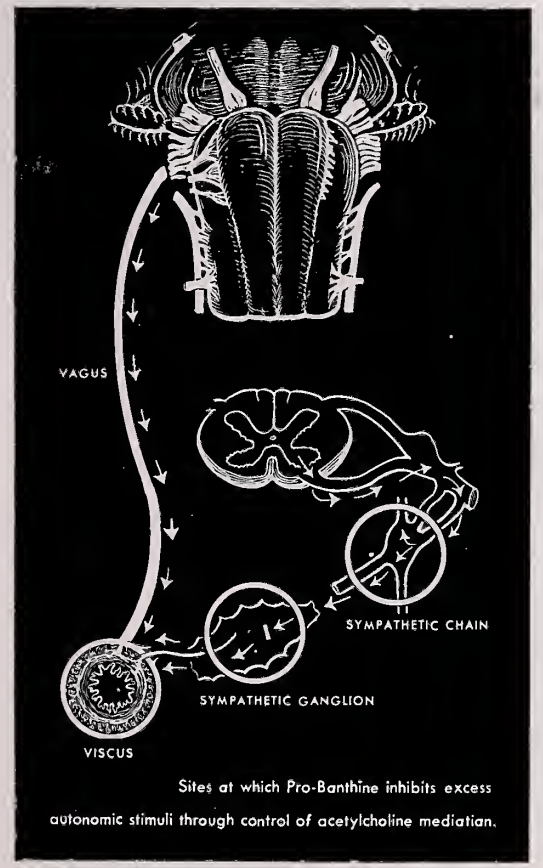
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1. Schwartz, I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: Gastroenterology *25*:416 (Nov.) 1953.

2. Roback, R. A., and Beal, J. M.: Gastroenterology *25*:24 (Sept.) 1953.

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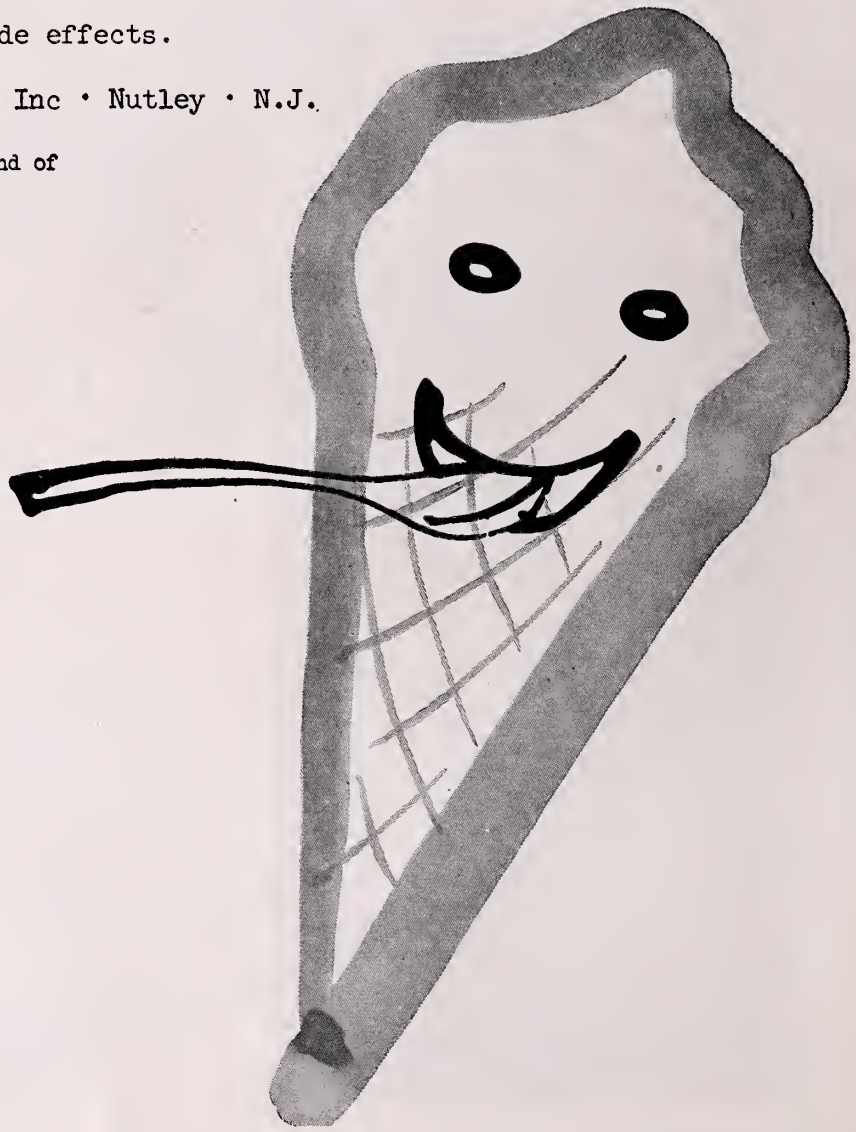
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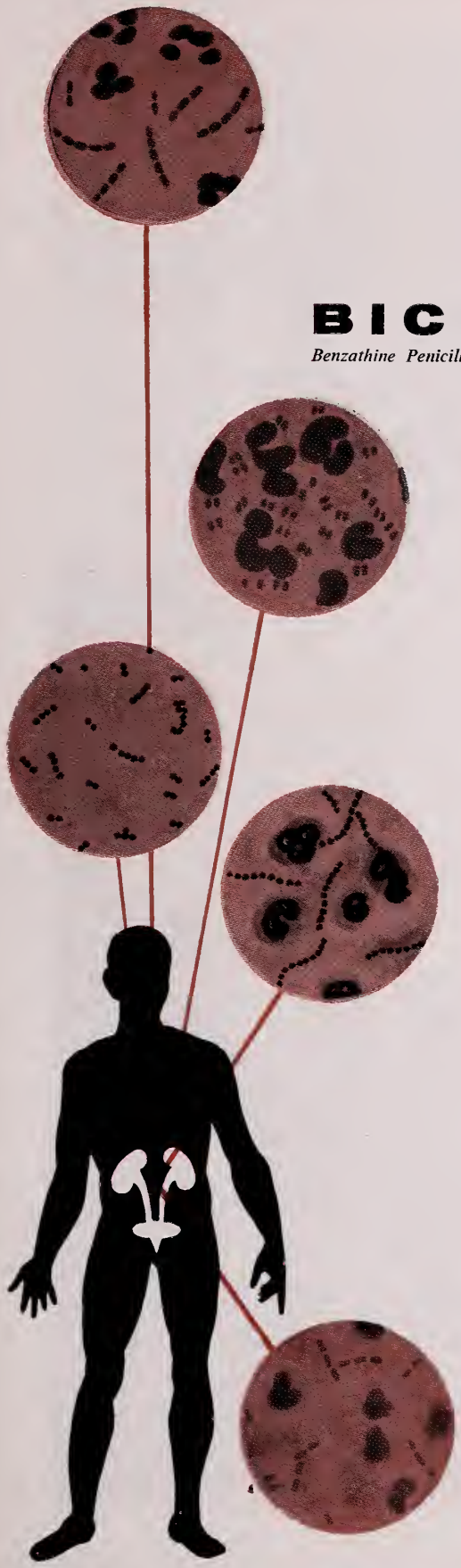
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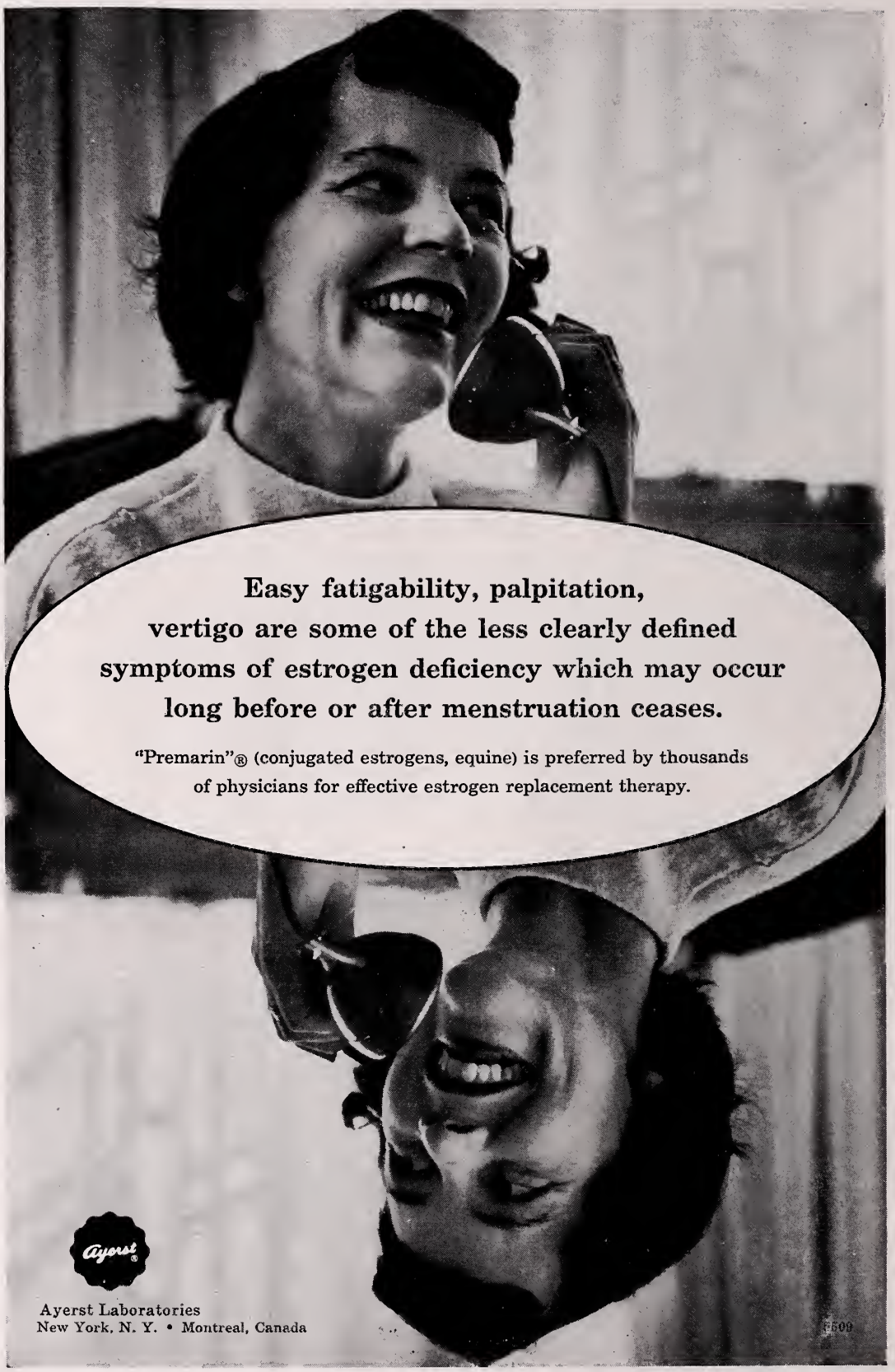
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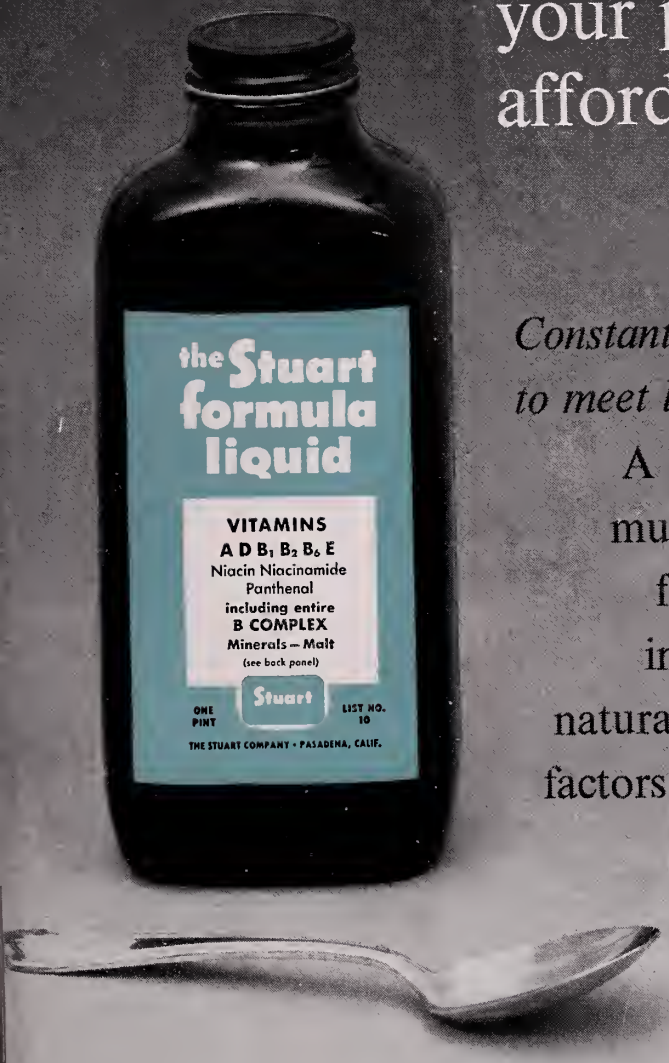
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1. Sherber, D A., and Levites, M.M.: J.A.M.A. 152:682 (June 20) 1953
2. Albert, A., and Albert, M.: Texas State J. Med. 50:814 (Dec.) 1954.

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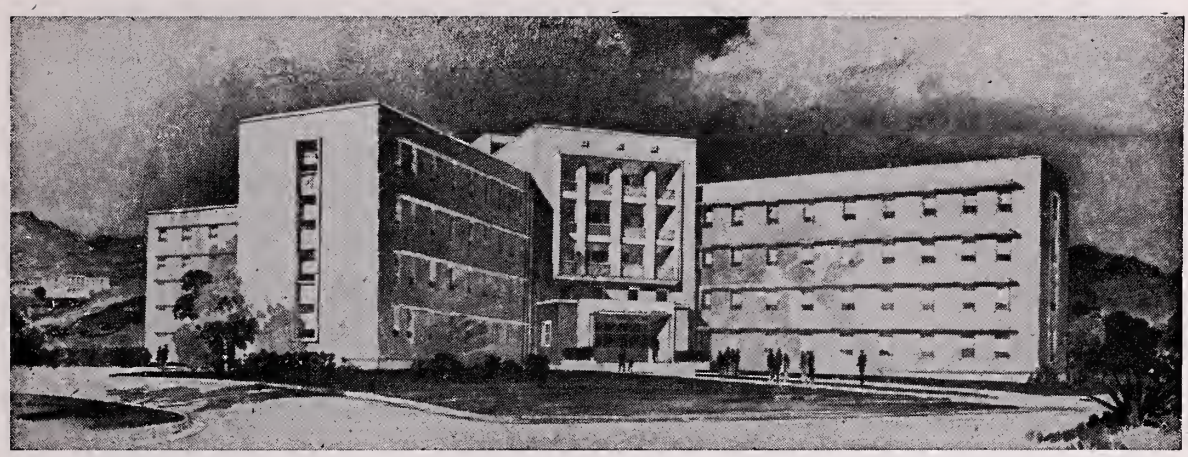
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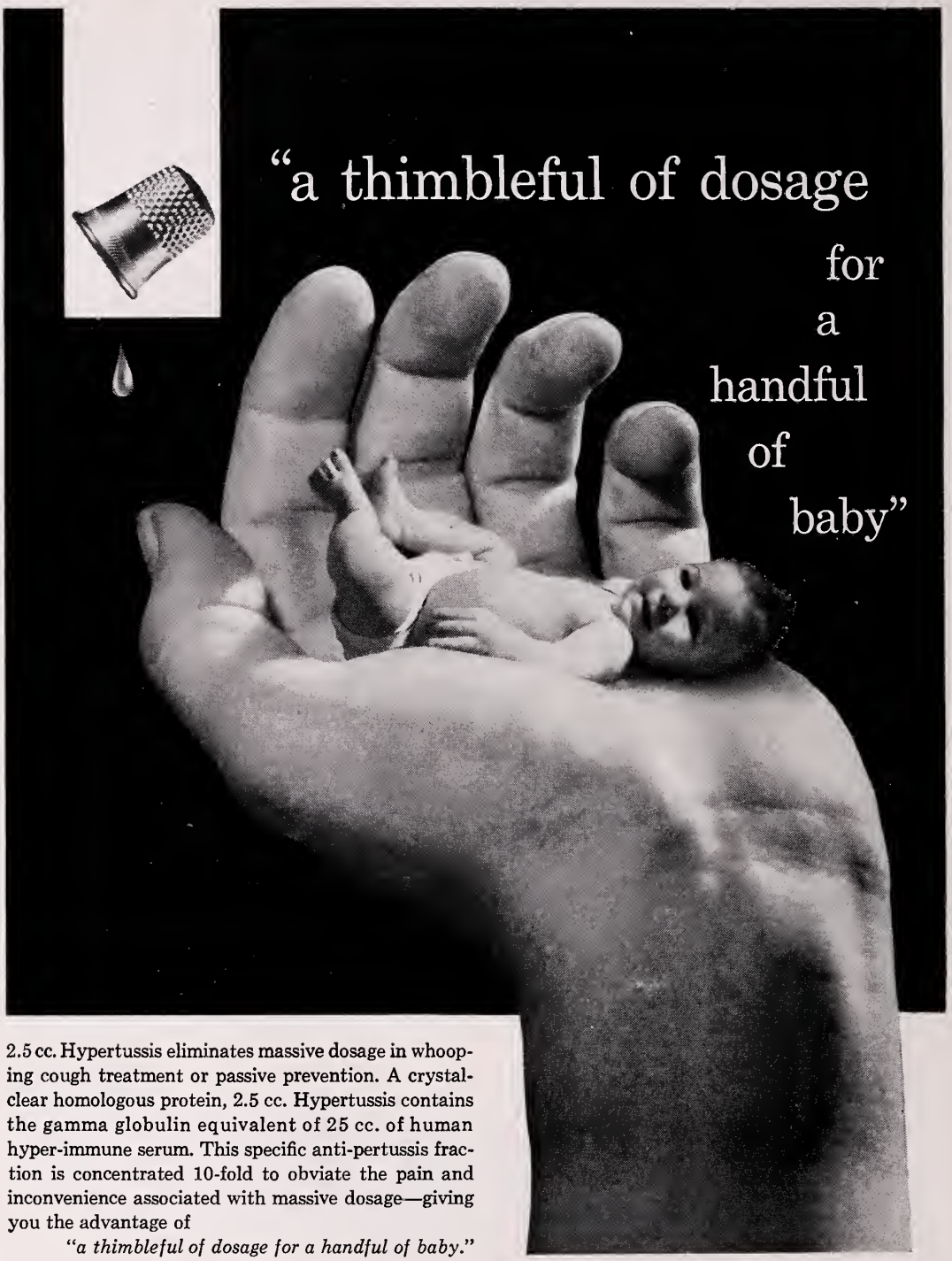
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Southwestern MEDICINE

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CURRENT THERAPY

Butazolidin

By Jack A. Bernard, M. D., El Paso

Geigy has available a nice review of the literature on Butazolidin, from which the following summary is taken. The therapeutic benefits of the drug seem well established but its use has been limited by the toxic reactions. It therefore is our duty as physicians to be cognizant of all the possible information regarding this useful yet hazardous drug. It might be mentioned in passing that chrysotherapy has been in use for years with questionable therapeutic value in spite of its great hazards and risks of toxicity.

Butazolidin has been proven to show potent anti-inflammatory reaction in the experimental animal and an analgesic effect comparable to that of the salicylates, but its potency is less than the potency of morphine. It is not as good as aspirin in the relief of pain associated with nonrheumatic disorders. Butazolidin also has an antipyretic action and an antihistaminic action. It affects the electrolyte balance and may cause water and salt retention. It has been thought by some observers to cause a uricosuric action but there is not complete agreement as regards this. It is felt that perhaps at higher dosage levels the uricosuric action may occur. There have been some observers who noted reduction in platelets. A mild secondary type of anemia has been noted fairly frequently. Gastrointestinal hemorrhages may occur.

Compared to Cortisone

As compared to cortisone, both Butazolidin and Cortisone exercise anti-inflammatory action and cause retention of salt and water. Both aggravate and occasionally produce peptic ulceration. Butazolidin does not produce the symptoms of hormone imbalance, such as the menstrual disturbances or moon face.

Clinically, Butazolidin is effective in relieving the pain of a wide range of arthritic disorders. It is felt that it exerts a specific anti-arthritic action distinct from its analgesic effect. It is well known that it is not curative but that it must be continuously administered for as long as the disease remains active. There is no development of tolerance to the drug. In the treatment of acute gouty arthritis it is as effective as colchicine. In rheumatoid arthritis it produces an effect frequently comparable to that obtainable with cortisone. In the treatment of rheumatoid spondylitis it appears to be more favorable than in peripheral rheumatoid arthritis. Finally, it should be prescribed with strict regard for its toxic potentialities.

Gouty Arthritis

For gouty arthritis improvement is generally apparent within 24 hours. Dosage is 200 to 400 mg. daily and response may be more rapid than that obtained with colchicine. Also the drug has been used to treat chronic gout to relieve the incidence and severity of acute exacerbations. It is thought to be the drug of choice for acute gouty arthritis.

For rheumatoid arthritis the incidence of improvement in patients ranges from 35 to 50 per cent. A lowered sedimentation rate does not occur. Also the combined use of cortisone and Butazolidin has been used and seems to facilitate a lower dosage of each.

As regards rheumatoid spondylitis the results are even more striking. As high as 80 per cent improvement has been noted. Also with relief of pain there was noted some increase in well being and increase in appetite and a slight tendency to gain weight. It should be pointed out that many of the patients were maintained on a lowered dosage of 200 mg. daily.

In arthritis with psoriasis the results have been encouraging and extensive skin lesions have shown improvement in some cases.

In the painful shoulder syndrome Butazolidin has been particularly effective. In the painful shoulder syndrome due to bursitis, tendinitis, and periarticular inflammation, Butazolidin has been particularly effective and a rapid relief of symptoms has been noted.

Other Diseases

Other diseases and conditions for which it has been used are the degenerative arthropathies, rheumatic fever, miscellaneous musculoskeletal disorders, metastatic carcinoma, Hodgkin's disease, and superficial thrombophlebitis. It should be emphasized that the usefulness in the degenerative arthropathies is limited by the fact that most of these people are in the older age group and may presumably be more susceptible to toxic side effects. Its use in rheumatic fever has been more extensive in the European countries than in this country.

One of the most important aspects of the use of

(Continued on Page 22)

THE PRESIDENT'S COLUMN

How Justified?

By John H. Dettweiler, M. D., Albuquerque

While attempting to restore a degree of normalcy to my office, after thoroughly enjoying another fine Southwestern annual meeting, my eyes were abruptly opened by the following letter. This letter was post marked November 20, 1955, Phoenix, Arizona.

Critical Letter

"I notice you have just been elected president of the Southwestern Medical Association. I hope that during your administration you will persuade your colleagues to do something for the people instead of building up your racket to get every penny out of your patients possible. The people are greatly disturbed about your unfair and unjust charges.

"I went to a doctors office in Phoenix and he would not see me that day, although he was idle. I know a widow who had a heart attack and went to a hospital in your town and this hospital charged her $1,500 and the doctor charged her $500. She was deliberately cheated in this case. I know a man who bled to death in a hospital because he did not have any money on his person. I know an old washwoman who went to a doctors office to get treatment. She had two dollars and the doctor took that for writing a prescription and she had nothing left for medicine. I took my little daughter to a hospital because of a cat bite. There were seven of your kind in the hospital and they refused to treat my little girl because I had no money.

"The people despise your organization. You represent a racket. You live in $50,000 houses and own several high priced cars. It is your game to get in politics. Your association spends over $3,000,000 a year for propaganda. You prevent the building of medical schools. You prevent college students from entering medical schools so you can keep your prices up. You have a malicious and bad union. You cash in on suffering humanity. Your medical associations stink, don't you really think so." — Anonymous.

Explanation

Intermingled with some misunderstanding, misinformation, extreme bitterness and possibly some psychotic reasoning, there is undoubtedly some regrettable basis for these complaints. We can ignore such letters too easily, but wouldn't we reduce such bitterness and elevate our professional standards if we reflect seriously on such complaints and ask ourselves, "How Justified?"

Butazolidin . . .

(Continued from Page 21)

Butazolidin is its toxic effects. These occur in about 32 per cent of the patients and in about 12 per cent are severe enough to justify the withdrawal of the drug.

The side reactions include: Edema, due to the salt-and-water-retaining properties; gastrointestinal disturbances: abdominal discomfort and nausea, the aggravation of peptic ulcers, hemorrhage and even perforations. The instance of skin reactions appears to be about 5 per cent and some have been quite severe, even fatal. A tendency to secondary anemia, agranulocytosis, including fatal cases, are reported. Liver damage has been mentioned but it has not been very severe.

Dosage Level

It has been felt by some observers that the dosage level has a significance in the toxicity and that the toxicity incidence may be reduced by smaller dosage. It has been pointed out that most complications have occurred during the first five weeks of therapy. It should be emphasized again that the susceptibility to reaction increases sharply with the age and it was noted that in patients 51 to 70 years old reactions occurred in 60 per cent.

In summary: Butazolidin seems to be a highly effective and potent drug and quite valuable in the treatment of acute gout, rheumatoid arthritis, particularly rheumatoid spondylitis, and may be useful in some of the other conditions mentioned above. Its toxic effects are well known now; and the physician should be alert to these and observe his patient frequently, both clinically and with laboratory tests while the patient is under treatment. It seems that it has been quite safe for acute gout, in the smaller dosages as recommended and for short periods of time. Its usage is particularly hazardous in the older age group.

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

November 17, 1955

FREDERICK P. BORNSTEIN, M. D., EDITOR — CASE NO. A496-55
PRESENTATION BY W. R. GADDIS, M. D.,
HISTORY BY NATHAN KLEBAN, M. D.

History:

On October 3, 1954, this 71-year-old Latin-American widow was admitted to this hospital on the tuberculosis service for the second time because of "coughing up a wash basin full of blood" shortly before admission.

The patient was said to have had only the "usual childhood diseases." At age 35 years she had pneumonia. A "hernia," type and location not specified, was the reason for hospitalization at age 37 years. At some time prior to her first admission to this hospital in 1945 a diagnosis of diabetes mellitus was made. An X-ray of the chest in 1944 was said to show no evidence of tuberculosis. "A pulmonary hemorrhage . . . one-two days before" prompted her first admission on September 23, 1945.

Parents Dead

The patient's father had died of "heart disease," her mother in childbirth, and two brothers were living and well. There was no known family history of tuberculosis, diabetes, cancer, or cardiovascular disease. The time and cause of husband's death were not recorded. Pregnancy and menstrual history were not obtained. On admission in 1945 the patient's general condition was "fair, height 63 inches, weight 150 pounds, temperature 99.2, pulse 85, respirations 18, blood pressure not noted.

Coarse rales were heard over both lung fields. The heart was not enlarged, rhythm was sinus, and no murmurs were heard. A left ventral abdominal hernia was found. The admitting diagnosis was "Tuberculosis, chronic, far advanced both lungs." The chart contains neither laboratory nor X-ray reports.

Vitamin K and codeine were given on admission. Urine and blood were examined for sugar. On October 18, 1948, a "golf ball" size wart was removed from the right labia majora, with a pathological report of "gross specimen consists of tissue from venereal wart."

The patient received 10 units of protamine zinc insulin daily, with some adjustment according to urine and blood sugar values. In 1950 an inguinal abscess was incised and drained. She received a "course of streptomycin," dosage and span of time not recorded.

From admission until discharge on September 22, 1951, she was in bed most of the time, seemed to be symptom free except for weakness, and gained weight.

An interval history at the time of her second admission is not recorded, except that she lived alone in a single room.

Physical Examination:

The patient was coughing and spitting bright blood, seemed to be slightly short of breath. The temperature was 98.6, remained below 99 throughout most of her hospital stay, was at or slightly above 100 on several occasions. Respirations 24, pulse 74, blood pressure not noted. Oral hygiene was poor. Heart rhythm was normal sinus, size not stated, with a systolic murmur at the apex, quality, grade and transmission not recorded. Rales were heard over the left lung, signs of fluid detected over the right. A ventral abdominal hernia in an old transverse surgical scar was observed. A pelvic examination was not done. The balance of the physical examination was said to be within normal limits.

Hospital Course:

On admission the patient was given vitamin K and codeine. Hemoptysis ceased within the first few hours, with no recurrence. The nurses' notes recorded a mild epistaxis twice. A transfusion of 500 c.c. of whole blood was given on the fourth and fifth days with no reaction. On the day of admission the patient became nauseated and vomited, and this continued as the most persistent and distressing annoyance throughout her hospital course.

Dramamine, Carmethose, Thorazine, and a "semi-ulcer" diet had little effect in controlling the nausea and emesis. On December 23, Gantrisin was begun and continued for five days for "cystitis." On January 5, 1955, the patient was incontinent of feces. The patient complained of pain in the left eye on March 6. It was seen to be swollen and reddened. An ointment, penicillin parenterally, and Diamox were prescribed with no improvement.

On April 20 an eye consultant saw the patient, made a diagnosis of glaucoma, prescribed pilocarpine and eserine. The eye improved, but an urticarial skin eruption occurred, which subsided when the pilocarpine and eserine were discontinued. Because of a toothache the patient's three remaining teeth were extracted on March 21.

Cor Pulmonale

On May 15, a house officer recorded that the patient "has cor pulmonale and is severely ill." Another house officer, on June 24, heard rales in the left chest, detected evidence of fluid in the right chest, elicited tenderness in the right upper abdominal quadrant but could not feel the liver, and thought the patient was in congestive heart failure. She was given

1.2 mg. Cedilanid i-v, an additional 0.4 mg. in eight hours, 0.4 mg. Digitoxin twelve hours after the initial Cedilanid was given, and thereafter was given 0.2 mg. Digitoxin daily. The next day she was thought to be better, but in what manner was not stated. Watery diarrhea developed, persisted despite Kaopectate. Involuntary watery stools, urinary incontinence, vomiting, lethargy and somnolence characterized the last several weeks of life. Through most of her hospital stay, the patient received daily one gram of streptomycin, three hundred milligrams of Rimifon, nine grams of para-amino salicylate, ferrous sulfate and multivitamins. The patient drifted into death on July 6, 1955.

X-RAY REPORTS:

November 4, 1954: Upper G. I. series negative for evidence of tuberculosis, gastritis or enteritis. Re-examination and comparison with previous study reveals a fluid level at the right base secondary to old cavity. The remainder of the lung fields reveal no significant change.

November 9, 1954: Due to the patient's inability to cooperate the examination was not entirely satisfactory. Barium was instilled into the rectum and flowed readily throughout the colon to the ascending colon at which point the patient evacuated, and the examination was interrupted. There were no significant addition or subtraction defects. Evacuation film reveals the mucosal pattern to appear natural. There is an area of calcifield probably represents a large pulmonary spine reveal no change from the previous examination.

November 22, 1954: Re-examination of the chest and comparison with previous study reveal no significant change from the previous examination. The fluid level on the right lower lung field probably representes a large pulmonary cavity. However, eventration of the diaphragm or sub-diaphragmatic abscess cannot be excluded by this examination.

LABORATORY:

October 4, 1954: Urinalysis: Yellow, cloudy, acid, 1.007, albumin 1+, sugar negative, acetone negative, WBC 20-30/hpf, RBC none, casts none.

RBC 3.27; Hb. 10.2 gms.; hematocrit 32 per cent; corrected ESR 42mm/hr.; WBC 11.5; stabs 2, segs 80, lymphs 10, monos 1, eosins. 7.

Fasting blood sugar 136 mg. per cent.

No AFB seen on smear.

October 5, 1954: Urinalysis (catheterized): yellow, cloudy, acid, 1.004, albumin 2+, sugar negative, acetone negative, WBC 8-15/hpf, RBC none, rare coarsely and finely granular casts.

Kolmer negative, Kahn doubtful.

October 7, 1954: Fasting blood sugar 88 mg. per cent.

Kolmer negative, Kahn doubtful.

November 4, 1954: Urinalysis (catheretized): straw, hazy, acid, 1.005, albumin 2+, sugar negative, 10-16 WBC/hpf.

November 5, 1954: Urinalysis: straw, cloudy, acid, 3+ albumin, sugar negative, 10-15 WBC/hpf.

November 30, 1954: No growth on AFB culture.

December 3, 1954: Fasting blood sugar 116 mg. per cent.

December 27, 1954: Urinalysis (catheterized): yellow, hazy, acid, 1+ albumin, sugar negative, many clumped WBC/hpf.

December 30, 1954: Urinalysis (catheterized): yellow, hazy, acid, 1.010, 3+ albumin, sugar negative, 6-7 WBC/hpf.

Kolmer negative, Kahn doubtful.

January 26, 1955: Fasting blood sugar 83 mg. per cent.

February 1, 1955: Feces: no ova or parasites seen.

March 29, 1955: Fasting blood sugar 113 mg. per cent, urine sugar negative.

April 4, 1955: Neg. AFB smear.

May 6, 1955: Fasting blood sugar 119 mg. per cent.

Urinalysis: straw, hazy, acid, 1.009, albumin 3+, WBC 12-16/hpf, RBC 4-6.

May 30, 1955: AFB culture negative.

X-RAY DISCUSSION

Dr. Vincent M. Ravel:

The first film was taken in October of 1945 and it was on the basis of this film, I assume, that the patient was given the diagnosis of chronic, far-advanced, fibroid tuberculosis and was admitted to the tuberculosis ward. Everyone will agree that there are a considerable number of changes on this film, particularly at the right base and at the right apex.

There are several radiolucent areas that suggest cavity and there are changes at the left base that suggest a bronchogenic spread of the lesion to the left base. The trachea is in its usual position. The diaphragm appears natural. I mention this because later on we are going to see some changes which may possibly affect or influence our final opinion.

Nine Years Later

Now, approximately nine years later there was a film that was read as showing no significant change except for the presence of a fluid level at the right

base. Again, the cardiac silhouette doesn't show any particular change. There is a little difference in the technique. The structures on this film appear larger.

Actually I think it's a matter of the tube distance and a matter of technique rather than a real change in the size of the patient, but again we have fibroid changes on the right and changes at the right base with apparently a fluid level with a large cavity.

Certainly the most common cause for a lesion of this type that would persist over a period of years is tuberculosis. Some of the other chronic inflammatory diseases such as coccidiomyocosis, actinomycosis or histoplasmosis certainly can be considered, but the most common cause will be tuberculosis.

Another Film

Approximately two and a half weeks later we have another film which shows no significant change other than that this might be a subdiaphragmatic abscess with a fluid level. It wouldn't be very much of a problem to decide, had the patient been fluoroscoped, whether or not this was diaphragm or whether it was a pulmonary cavity.

The lateral view of this patient shows that most of this infiltration and fibrosis is in the middle lobe, and, of course, that brings up the possibility of a middle lobe syndrome with a bronchial stenosis and a chronic fibrosis involving the middle lobe, which would be a secondary lesion to the apical one on the right. In looking over these films from 1945 to 1954, it seems to me there are some findings that warrant a little explanation.

Lesion Unusual

It is rather unusual to have as far advanced a lesion as this in the right upper lung field without evidence of fibrosis and distortion of the hilar vessels. The trachea will usually be moved over but this is not the case. That makes me wonder again about the nature of this lesion because I don't recall seeing many chronic tuberculous changes in the chest without considerable distortion of the mediastinal structures including the hilar vessel and the trachea and esophagus. The cardiac silhouette, from the radiographic standpoint, appears to me to be perfectly within normal limits. The aorta is slightly elongated. Certainly we know from the abdominal examination that this patient had an advanced arteriosclerosis.

Sclerotic Changes

On the upper G. I. films there were changes, an aneurysm of the splenic artery and some other changes in the spine, sclerotic changes with a narrowing of the interspace suggesting a possible tuberculous lesion with involvement of a vertebral disc and a vertebra. It doesn't look active. It just looks like an old burned out one. I think we'll have to call this a pulmonary cavity or lung abscess with a fluid level at the right base, probably involving the middle lobe.

DIFFERENTIAL DIAGNOSIS

Dr. William R. Gaddis:

When I examined the record of this patient, I was immediately struck by the fact that not only I didn't know the trouble, but neither did the attending people. I think probably of all the cases we have had demonstrating the difficulties that arise from the failure of obtaining a good history and physical examination, this is the most extreme one.

Somebody may have examined this patient, but if they did they surely didn't put the findings on paper. As simple an instrument as a sphygonomanometer is to use, it apparently was never employed in the treatment of this patient even though she was admitted to the emergency room with a rather copius amount of bleeding from the upper pulmonary tree, having vomited or coughed up a wash basin full of blood.

All Time High

No one thought to examine her blood pressure to see whether she might be in shock. Certainly, I think this is about an all time high as far as that sort of thing is concerned.

I will say this, that as near as I can determine, there wasn't any part of the record that was left out in an effort to confuse the one who would discuss it, and for that I am duly thankful. Dr. Kleban spent a good many hours digesting and compiling the record as it presents itself. As far as I'm concerned, the problem in respect to the patient concerns two things: one, hemoptysis, and two, the kidneys. As far as I can tell from this record, these two organs are involved.

Findings Reviewed

Now let's review the positive findings of this patient, aside from the radiological findings. First of all, the patient did have hemoptysis and was observed to cough up or spit up blood in the emergency room at the time of admission. As to quantity, we have no way of knowing. She was said to have vomited up or coughed up a wash basin full of blood.

Whether that can be accepted at face value or not is rather difficult to state. The initial examination of the blood after admission shows a rather moderate anemia which might have been caused by immediate blood loss but which also could have been present as a chronic finding over some period of time.

Second Observation

The second observation I was very interested in was the continued absence of acid fast bacteria, either on direct smear or on culture. No one was able to fulfill Koch's postulates in regard to this patient as fas ar tuberculosis was concerned. Thirdly, there was the presence of a pleural effusion or fluid on the right.

After looking at these chest films, I'm not so sure it was a pleural effusion because it appears that the costophrenic angles remain rather clear in spite of all

the reaction that was around them. That's a puzzling feature, I think, that we have to explain.

Rales on Lung

An additional positive finding was the presence of rales in the left lung. A systolic cardiac murmur, otherwise not described, was also present. This may have been a hemic murmur, we don't know. The patient also had a hernia. This was a typical ventral hernia through an old incision and, of itself, probably played very little part as far as the terminal course of this patient was concerned.

This patient had a very poor renal situation. Her kidneys were depressed, as far as function was concerned, as manifested by continued and constant low specific gravity of the urine and the presence of pyuria, albuminuria and casts.

Moderate Anemia

She did have this moderate anemia. Now if we were to go back and review from a "book-learning" standpoint the causes of hemoptysis, we might say that they are, first of all, due to the presence of certain congenital anomalies which can, on occasion, cause hemoptysis. There are circulatory phenomena directly responsible for hemoptysis.

Let's say that pulmonary embolus and sudden acute failure of the left side of the heart will cause hemoptysis, as will hemorrhagic diseases and certain drugs, particularly those which we use today to induce an increase in the prothrombin time, so that the patient has a decreased threshold as far as clotting is concerned. We have the questions of trauma and mechanical disturbance which are not relevant here.

Respiratory Infections

Acute upper respiratory infections are not infrequently responsible. Patients with acute severe bronchitis will cough up blood and, of course, there are the chronic respiratory infections such as this patient had. The specific nature of it we do not yet know.

We always, also, have to think about neoplasms. This patient could well have had a neoplasm, which explains her middle lobe syndrone and, possibly, an adenoma of the bronchus here with continual atelectasis and formation of such a cavity or an old abscess as we see here which may have burned itself out.

It's quite possible that this cavity might have evacuated itself through the bronchial tree at one time or another along with passage of blood.

Pleural Effusions

We could talk about pleural effusions in much the same manner, but after looking at this film, I'm not concerned with a pleural effusion except for the observation of Dr. Ravel that he saw in the pelvis an uterine fibroid during the course of a barium enema examination. That made me think of one possibility, that it may have been an ovarian fibroma with the production of a Meig's syndrome, although this is unlikely. Then we have the appearance in this patient of an acute glaucoma.

Now it's my opinion, after reading the history, that the glaucoma had nothing to do with the whole and final picture that produced her death.

Negative Evidence

We have also continued negative evidence of the existence of supposed diabetes mellitus. If you have looked at the record and examined it, the blood sugar determinations and urine determinations at no time indicate the presence of diabetes mellitus. Certainly if she had as much arteriosclerosis as we can see here in the splenic artery, it wouldn't be surprising if she had diabetes, but there seemed to be no change in the threshold for sugar as far as we were able to determine.

Possibilities Legion

When I begin to pin myself down to the diagnosis of this patient, I think that the possibilities are legion. To begin to enumerate a great many of them I think would be futile in a discussion of this kind.

First of all, I thought about the presence of an adenoma of the bronchus with a production of an atelectasis and a cavity forming an abscess with alternate evacuation at times.

After looking at these films tonight, I'm not sure that this is the whole explanation. This patient lived in Smeltertown. There are a lot of industrial dusts there. Part of the symptoms may be due to silicosis. Whether that was the case or not, I don't know.

Pulmonary Hypertension

I think she might have had a pulmonary hypertension. I also mentioned the presence of Meig's syndrome but that doesn't correlate with the type of fluid we have here. Certainly one of the pulmonary forms of the common mycoses that Dr. Ravel mentioned should be seriously considered with this patient, as with any patient who lives in this part of the country. Coccidiomycosis and histoplasmosis are certainly not unheard of.

Blastomycosis is not quite so common here, but can cause a pulmonary picture much like this. I'm quite interested in this cavity or abscess on the right side. If I'm misinterpreting this, it's all right, but it looks like I can almost see diaphragm above it.

Regular Pattern

I'm not sure, but it has the appearance that it could be, and it's a fairly regular pattern. Otherwise, if it isn't, the diaphragm is certainly a little bit off, perhaps it's been pulled in, but the other normal curve would go along a line similar to this.

This patient could have had a hepatic abscess, subdiaphragmatic, which had been walled off after rupture and which could have penetrated through the diaphragm and into the thoracic cavity. I don't know whether this ever happens or not but it could have been so evacuated through the pulmonary tree.

Question Remains

But the question remains, what am I going to

call it? Well, in spite of all the repeated urinalyses done on this patient, somebody missed the boat.

They were apparently looking for diabetes and overlooked the thing that was right in front of them. I think the patient had a chronic pyelonephritis with a para-nephritis and possibly a sterile abscess to go with it.

I think she had hypertensive cardiovascular disease secondary to the causes enumerated in the kidney, namely chronic pyelonephritis, that she had some congestive failure terminally, but that death came from uremia.

Fungus Disease

I'm sorry that I can't say more about the actual cause of the disease in the lungs themselves, but I'm going to say that I believe it to be fungus disease. I will say coccidiomycosis to stick my neck out a little farther than I need to.

Certainly this patient is a problem. It's a puzzle, and I think that if you or I had this patient to deal with we would be puzzled, but I'm certain that also we would insist that there be something done to discover the cause of the patient's illness beyond what little was done here.

Dr. Manley B. Cohen:

The point that Dr. Gaddis makes about the possibility of a subdiaphragmatic lesion is good. Patients with uremia will often have diarrhea, but there is only one feces examination on the protocol and there may well have been an amoebic liver abscess with perforation above the liver and formation of an abscess above the liver below the diaphragm.

It is not uncommon for the amoebic type and other infestations to penetrate the diaphragm and lodge in the lungs causing bronchial pleural fistulae, empyemata and various types of pulmonary pathology of that type. We have good reason to suppose that this was a fungus disease.

Dr. H. M. Gibson:

Two people have mentioned the kidneys, so I've go to say something about them, too. I agree, first of all, that this patient definitely did have renal disease. I think probably the primary condition, was a nephrosclerosis. I'm quite sure that we will find nephrosclerosis, a contracted kidney and I think there will be quite a bit of an interstitial type of nephritis.

Another condition that will slip up on us very often in an individual like this will be bilateral staghorn calculi which will give the same sort of urinary findings and the same sort of death as this patient had.

CLINICAL DIAGNOSIS

Pulmonary tuberculosis, far-advanced. Diabetes.

Dr. Gaddis' Diagnosis:

1. Chronic pyelonephritis.
2. Fungus disease of the lungs.

ANATOMICAL DIAGNOSIS

1. Calcific mitral stenosis.
2. Acute diffuse purulent bronchitis.
3. Bronchiectasis of the middle lobe with multiple abscesses.
4. Nephrosclerosis, severe.

PATHOLOGICAL DISCUSSION

Dr. Frederick P. Bornstein:

On autopsy we found an obese, elderly woman. The heart was rather small with a dilated left auricle. The mitral leaflets were fused together producing a narrow fish-mouth type of stenosis. Both lungs contained numerous small areas of consolidation. The main change was found in the right middle lobe. The bronchi were dilated and filled with purulent material and in the parenchyma there were numerous soft areas filled with pus.

On microscopic examination, we found a diffuse organizing pneumonitis and multiple small abscesses. The kidneys were quite small and had an irregularly scarred surface. The microscopic examination showed the typical picture of a far-advanced nephrosclerosis. In addition, many of the arterioles show signs of recent necrosis.

Uremic Process

There is very little doubt in my mind that the change in the kidneys are compatable with the existence of a uremic process. The necrosis of the arterioles is especially suggestive of such a condition.

The mitral stenosis is a contributory factor to death; and, as we all know, mitral stenosis is frequently associated with hemoptysis. The lung lesion which attracted so much interest represents an organized pneumonitis mainly of the right middle lobe as was pointed out by Dr. Ravel. I think that a bronchiectasis represents the original lesion which is responsible for the change in the right middle lobe.

Dr. Manley B. Cohen:

I don't deny the fact that bronchiectasis, or any disease forming multiple small abscesses of the lung over a period of time, will present a picture not unlike this, but I'd also like to present one fact about tuberculosis in patients who are on very long term and very adequate anti-biotic treatment.

It is now well established by many studies, particularly those of Auerbach, that pulmonary cavities due to tuberculosis will heal, in situ, as cavities and have an epithelial lining and no evidence of any kind, either pathologically or bacteriologically, that tuberculosis was ever present, and we have here a history of ten years. I present the view that this possibly might be a burned out, old tuberculosis and that the bronchiectasis is secondary to that.

Dr. Frederick P. Bornstein:

It's quite possible, although it is hard for me to imagine that we wouldn't find some areas of calcifi-

(Continued on Page 37)

MEETINGS

Dr. Dettweiler of Albuquerque Named Southwestern Medical Association President

Dr. John H. Dettweiler, of Albuquerque, was elected president of the Southwestern Medical Association at the recent annual meeting in Phoenix. He succeeds Dr. Joseph Bank of Phoenix.

Other officers elected at the meeting were Dr. Celso C. Stapp, El Paso, president-elect; Dr. E. W. Lander, Roswell, N. M., vice-president; Dr. Russell L. Deter, El Paso, secretary-treasurer; and Drs. Louis Jekel, Phoenix, A. G. Herrera, Chihuahua City, Mexico; and Stuart Sanger, Tucson, members of the executive committee. Albuquerque was selected as the site for the 1956 meeting. Dates for the meeting are October 17, 18 and 19, 1956.



Dr. John H. Dettweiler

Dermatologists Meet

The Southwestern Dermatological Society held its fall meeting in Phoenix in conjunction with the Southwestern Medical Association meeting. Officers of the Society are Dr. Samuel J. Jelso, Albuquerque, president; Dr. Kenneth C. Baker, Tucson, vice-president; and Dr. Robert H. Snapp, Phoenix, secretary-treasurer. Dr. J. Walter Wilson, Associate Professor of Dermatology at the University of Southern California School of Medicine, was the guest speaker. Twenty-five clinical cases were presented for study and discussion by the Society's members and guests. The Society voted to make SOUTHWESTEN MEDICINE its official publication.

Also held in conjunction with the Southwestern Medical Association meeting were the annual conference of the Maricopa County Medical Society on recent advances in medicine, and the Southwestern Academy of Ophthalmology and Otolaryngology meeting.

Born in Kansas

The new president of Southwestern Medical Association, Dr. Dettweiler, was born in Arkansas City, Kansas, attended Georgetown schools in Washington, D. C., and received his B. S. from Georgetown University and his M. D. from Georgetown University School of Medicine. He interned in the Georgetown University Hospital and served his residency in the Gallinger Municipal Hospital in Washington, D. C. He then taught clinical medicine at the University of Arkansas School of Medicine for one year.

Moving to Albuquerque in 1949, he opened an office for the practice of internal medicine in the Medical Arts Square. He is vice-president of the Bernalillo County Medical Society. He and his wife, Terry, with their two children, John, 10, and Terry Ann, six, reside at 914 McDuffie Circle in Albuquerque.

Impressive List

On the impressive list of guest speakers at the Association's meeting were Dr. H. L. Bockus, Dr. William E. Ehrich and Dr. L. Kraeer Ferguson of the University of Pennsylvania Graduate School of Medicine; Dr. Hans H. Hecht of the University of Utah School of Medicine; Dr. Conrad J. Holmberg of the University of Minnesota School of Medicine, Dr. Edward H. Rynearson and Dr. John W. Kirklin of the Mayo Foundation; Dr. I. V. Ponseti of the University of Iowa School of Medicine; Dr. Kenneth L. Roper of the Northwestern University School of Medicine; Dr. Reginald H. Smart, Dr. John L. Webb and Dr. J. Walter Wilson of the University of Southern California School of Medicine; and Dr. Donald C. Collins of the College of Medical Evangelists in Los Angeles.

Dr. Bank Speaks

Dr. Bank, who served as president of the Association for 1954-55 and who also was chairman of

(Continued on Page 37)



SPECIAL PICTURE REPORT
SOUTHWESTERN MEDICAL ASSOCIATION

Setting for the annual Southwestern Medical Association meeting in Phoenix, Nov. 16 to 18, was the Westward Ho Hotel in the downtown section of the rapidly expanding, sprawling and sunny Arizona metropolitan center. Above is a view of the Westward Ho's colorful patio and swimming pool from one of the rooms.





Upper left at the Southwestern Academy of Opthalmology and Otolaryngology luncheon at the Southwestern Medical Association meeting are, left to right, Dr. Oscar W. Thoeny, Phoenix, past president of the Arizona Medical Society, Dr. Conrad J. Holmberg of the University of Minnesota School of Medicine, Dr. Kenneth L. Roper of Northwestern University School of Medicine and Dr. John Mc Loone of Phoenix. Upper right are Dr. Edward H. Rynearson of Mayo Clinic, left, and Dr. Ashton Taylor of Phoenix, who presided at the first round-table discussion.





Upper left are Dr. H. L. Bockus (left) and Dr. William E. Ehrich, both of the Graduate School of Medicine at the University of Pennsylvania. Upper right are Dr. Joseph Bank of Phoenix, immediate past president of the Association, (left to right) Dr. Dettweiler, the new president, and Dr. Russell L. Deter of El Paso, association secretary-treasurer. Below are, lower left, Dr. I. V. Ponseti, left, of the University of Iowa School of Medicine, and Dr. Chester Bennett of Phoenix. Lower center are Dr. L. Kraeer Ferguson (left) of the Graduate School of Medicine of the University of Pennsylvania and Dr. Elmer E. Yeoman of Tucson, a Pennsylvania graduate. Lower right are Dr. John W. Kirklin of the Mayo Foundation, left, and Dr. C. S. Britt of Sea Island, Georgia.











Upper left, Dr. Thomas A. Edwards of Phoenix, chairman of the registration committee, gets a smile from Mrs. W. V. Ergenbright of the Maricopa County Medical Society's Auxiliary at the registration desk. Upper right, Dr. Donald A. Polson of Phoenix (left), chairman of a round-table group, chats with Dr. Francis Allison of Phoenix.





In the photo on the left, Miss Pat Small of the Maricopa County Medical Society staff (right) greets Dr. and Mrs. Melvin W. Phillips of Prescott, Ariz. A large part of the work at the convention was done by Miss Small. In earlier preparations for the meeting Miss Margaret Dessert, associate executive secretary of the Society, was most helpful. Above, left to right, are Dr. Harold J. Rowe, Tucson, Dr. Branch Craige of El Paso and Dr. Edward Egbert of El Paso.





In the photo on the left are (left to right) Dr. Roy Hewitt, Tucson, Dr. Howell Randolph, Phoenix, Association past president, Dr. Reginald H. Smart of the University of Southern California School of Medicine, and Dr. Shaw McDaniel, Phoenix. Above are Dr. Samuel Shore of Phoenix (left) and Dr. C. Thomas Read of Phoenix, Lower left are Dr. Juan S. Gonzalez (left) of Nogales, Ariz., and Dr. W. Albert Brewer of Phoenix. Lower right are Dr. Robert S. Flinn of Phoenix (left) and Dr. Joseph Madison Greer of Phoenix, a past president of the Association.







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AMONG TE

Across the Top. 1--Dr. Ben P. Frissell, Phoenix, (left) and B. J. Kelley, Phoenix, Lederle Laboratories. 2—Roswell Olson, Phoenix, of Upjohn Co. (left) and Wally Mohr, Phoenix, of Smith-Dorsey Co. 3—C. W. Clark (left), Los Angeles, district manager for Eli Lilly and Co., and Dr. Maurice R. Vinikoff of El Paso. 4—(Left to right) Dr. George Bair, Plattville, Wis. and Lorne Person, Chick Pahud and Elmer Ulves, all of Person and Covey, Glendale, Calif.

On the Left. 5—Dick Mace (left), Los Angeles, of E. R. Squibb and Sons tells Dr. Dan Cloud of Phoenix what happened to his exhibit.

On the Right. 6—Dr. Williard W. Schuessler of El Paso (right), past president of the Southwestern Medical Association, receives a badge from C. C. Long of Phoenix of Eli Lilly and Co.





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EXHIBITS

On the Bottom. 7—(Left to right) R. B. Nash, Phoenix, Ciba Pharmaceutical Products, Inc., F. W. Zelewski, Denver, of Ciba, Dr. Ruth A. Johnson, interne at St. Joseph Hospital in Phoenix, and Dr. T. McCormick, also interning at St. Joseph's. 8—Jack Yancey, Phoenix, Southwestern Surgical Supply Co., and Dr. E. A. Henderson of Glendale, Ariz. 9—Dr. J. W. Davis, Tucson, (left to right) Al Gibbs of A. H. Robins Company, Inc., and Dr. Charles W. Elkins, Tucson. 10—Dr. Martin Withers, Tucson, (left) and Dr. Jacob Sobol, Phoenix. Among exhibitors not shown above were C. B. Fleet Co., Coca-Cola Co., Doho Chemical Corp., Ethical Pharmaceutical Co., G. D. Searle and Co., General Electric, J. B. Lippincott Co., Mead Johnson and Co., Medco Products Co., National Cash Register Co., Pfizer Laboratories, Sandoz Pharmaceuticals, and Standard Surgical Supply.













Upper left, physicians play in an Association tournament on the Paradise golf course with the Camelback Mountains in the background. Above, center, a foursome checks scores: (left to right) Dr. Robert Beers, Phoenix, tournament chairman, Dr. Robert Flynn, Dr. Derrill Manley and Dr. Tom Read, all of Phoenix. Upper right, Dr. John Ash, Phoenix, (left) and Dr. Walter Lee, Mesa, Ariz.







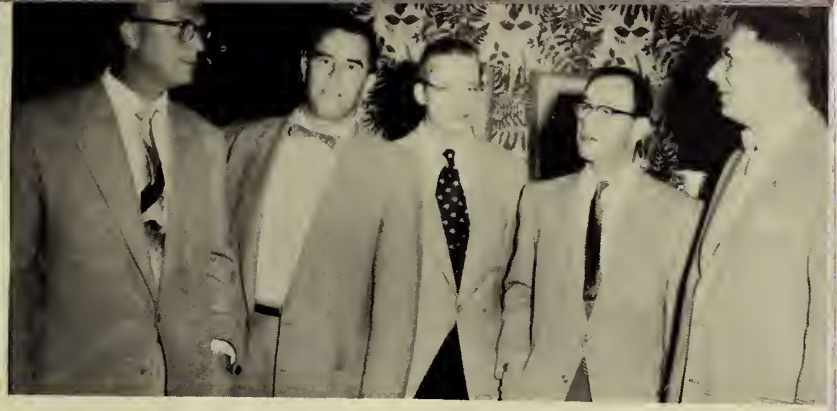
In the photographs above are (left) Dr. Morris E. Stern, Phoenix (left) and Dr. C. E. Troutman, Mesa, Ariz.; (center, above) Dr. Dana Lee Harnagel, Phoenix, and Dr. Joseph F. Peters, Albuquerque; (right, above) Dr. and Mrs. Charles F. Rennick, El Paso. Below, left, are Dr. and Mrs. Robert J. Antos of Phoenix; (center, below) Dr. Renate Leo, McNary, Ariz., and Dr. Daniel Yale, Whiteriver, Ariz.; (right, below) Dr. W. A. Reed, Phoenix, (left) and Dr. John L. Webb of the University of Southern California School of Medicine.











SOUTHWESTERN DERMATOLOGICAL SOCIETY

With the exception of the photo at the lower right of the page, these photographs show members of the Southwestern Dermatological Society, which held a one-day meeting Nov. 19 in connection with the convention. Upper left, 1, is Dr. J. Walter Wilson of the University of Southern California School of Medicine and Dr. Helen Roberts of Phoenix. 2—(Left to right) Dr. William Ragsdale, Phoenix, Dr. Ed Taylor, La Jolla, Calif., Dr. Seymour Shapiro, Tucson, Dr. Otis Miller, Tucson, and Dr. Robert Snapp, Phoenix, Society secretary. 3—(Left to right) Dr. John J. Corcoran, Albuquerque, Dr. Donald J. McNairy, Phoenix, and Dr. H. D. Garrett, El Paso. 4—Dr. E. R. Pace, Santa Fe, (left) and Dr. Kenneth C. Baker, Tucson, Society vice-president. 5—Dr. Carl Z. Berry, Tucson, (left) and Dr. Sam Mackoff, Phoenix.

Photograph No. 6 shows part of a group that gathered to hear Dr. Donald C. Collins (center, back row) of the College of Medical Evangelists for an International Academy of Proctology luncheon. Back row, left to right, Dr. Michael Matanovich, Phoenix, Dr. William Schroeder, Phoenix, chairman, Dr. Collins, Dr. R. W. Hussong, Phoenix, Dr. Robert Barfoot, Phoenix; front row, left to right, Dr. J. Reichert, Phoenix, Dr. Louis Lutfy, Phoenix, and Dr. Charles Nevins, Phoenix.















In the photographs above are, 1, Dr. and Mrs. Earl Malone of Roswell, N. M. (Dr. Malone is president of the New Mexico Medical Society.) 2—(left to right) Mrs. Russell L. Deter of El Paso, Dr. and Mrs. J. K. Bennett, Tucson, and Dr. and Mrs. Branch Craige, El Paso. 3—(left to right) Dr. and Mrs. Alvin R. Clauser, Albuquerque, Dr. and Mrs. Oscar W. Thoeny, Phoenix, and Dr. and Mrs. Louis W. Breck, El Paso.





4—(left to right) Mrs. John W. Dettweiler, whose husband is the Association's new president; Mrs. L. K. Ferguson and Mrs. John W. Kirklin, wives of the guest speakers.

5—(left to right) Mrs. Wesley G. Forster, Phoenix, Dr. Marcus W. Westervelt, Tempe, Ariz., Mrs. Tom Read, Phoenix, and Dr. James T. Harold, Phoenix.

6—(left to right) Dr. and Mrs. Jack Bernard and Dr. and Mrs. Ira A. Budwig, all of El Paso.

7—Dr. and Mrs. Philip D. Windrow of Phoenix.

8—Dr. and Mrs. Henry J. Stanford of Tucson.







Dr. Dettweiler . . . . . .

(Continued from Page 28)

the program committee, made the following remarks at opening of the three-day meeting:

"The members of this Association are concerned primarily with the active practice of medicine. They are busy men whose work is not limited by a 40 hour week. They are perhaps under pressure a good deal of the time fulfilling their obligations to their patients and to their practice. From time to time they must stop to refresh their minds and check their thinking in the field of medicine. They must acquire the new and discard the old. This process of medical education is continuous and is accomplished in many ways.

"One of these is provided by the Southwestern Medical Association in its annual meetings, typical of many such held all over the country. These meetings do more than provide information. For by bringing the practicing physicians in contact with the leaders of American medicine, they vitalize and personalize the educational effort.

Only One Thing

"Only *one* thing makes such a meeting as this possible. That is the generosity of American teachers of medicine, who, in spite of their multiple duties and responsibilities, give freely of their time and energy. They come to meetings such as this at considerable personal sacrifice. I should like to pay a personal tribute to them at this time. There are many other fields of scientific endeavor where official commendation has been created in the form of prizes or awards. But many of us feel there is insufficient recognition of the selfless devotion to the ideal of teaching by that group of physicians who do not receive adequate personal remuneration. I believe the nature of this service is not sufficiently appreciated by the medical profession who are in largest measure the immediate beneficiaries, and the public which benefits indirectly.

Selfless Giving

"In a way we take for granted the services of these men because they accept the burden imposed upon them by custom and tradition. Raised in the tradition of selfless giving of an Osler, Keen, Mayo, they are carrying onto the contemporary scene, the same generous spirit. We duly appreciate the unique American system which fosters and encourages the free dissemination of medical information. But let us most appreciate that in effect, the teachers who respond to the call of state and regional conferences for postgraduate instruction, actually are giving a subsidy to these meetings by their generosity.

"Let me then express, for all of us present today, an appreciation of the skill which these leaders have developed in the art of teaching. But even more, to thank them, for giving not only of their knowledge, but of themselves, — their time and energy."

Monthly Clinical . . . . . .

(Continued from Page 27)

cation or scars. At least if tuberculosis heals, there should be some clear proof of calcification somewhere.

After all, this patient has never had a positive sputum, before treatment, after treatment or at any time. There was no positive sputum and ten years ago you didn't even have the antibiotics we have available now.

Dr. Vincent M. Ravel:

I think it is really interesting that on these films we see no evidence at all of a left atrial enlargement which certainly you would suspect with that fish-mouth appearance of the mitral valve. Certainly the only explanation would be that there may have been relaxation of the entire mitral ring which still permitted enough blood to pass through to keep the left atrium from enlarging.

Dr. Saul B. Appel:

It is very interesting to see that post mortem finding of rather advanced mitral stenosis in a 70 or 71 year old woman. The fact that the history only records a systolic murmur at the apex really doesn't mean anything to me because in preparing C.P.C.'s elsewhere and also in listening to what clinical clerks would describe as a murmur, I think we have all seen that there's almost always general disagreement except if the murmur is particularly typical.

I do not doubt that if somebody tilted this patient on the left side and listened carefully, he might have described the murmur as being diastolic. So, I don't think we can use the evidence here as definitely showing she had mitral insufficiency versus mitral stenosis. There certainly is little evidence on the X-ray to indicate a heart that would go with such advanced mitral stenosis, but that's what makes the game interesting when the findings are not typical.

Dr. William R. Gaddis:

Again, it points to the old ideas that one cannot make a diagnosis if one doesn't examine the patient. And I think, had the observer who initially saw this patient with the hemoptysis or, had the one who saw the patient a day or two following the hemoptysis, re-examined the patient's heart and had he been interested enough to re-examine the patient's chest without instituting anti-tuberculous therapy, we might not yet have had a discussion tonight.

Dr. Newton F. Walker Elected President of El Paso County Medical Society

Dr. Newton F. Walker was elected president of the El Paso County Medical Society for 1955-56 at the Society's annual business meeting December 13.

Dr. Walker succeeds Dr. Joe R. Floyd as president. Other officers elected were Dr. Robert F. Thompson, president-elect; Dr. Gerald H. Jordan, vice president; and Dr. Morton H. Leonard, secretary-treasurer.



Dr. Newton F. Walker

Dr. Walker announced plans for continuing work of the Society's Disaster Committee in connection with Civilian Defense, with emphasis on all phases of medical activity in the community, particularly the military; for active participation in rabies control and community projects; for development of the emergency call system; and for the provision of additional scientific literature in the library of the Society's Turner home at 1301 Montana Street.

Born in Fleetwood, Okla., Dr. Walker was graduated from the Baylor University College of Medicine. He received his interne training at the California Lutheran Hospital in Los Angeles, and served his residency at the Ventura County Hospital, Los Angeles. He has taken postgraduate training at the New York Eye and Ear Hospital of the New York Postgraduate Medical School and the Columbia Presbyterian Medical Center.

Dr. Walker came to El Paso in 1937 and has since been associated with Dr. F. P. Schuster and Dr. S. A. Schuster in the practice of medicine in eye, ear, nose and throat.

During World War II he served in the Medical Corps for five and one-half years, four years of which were spent in overseas duty. He was chief of the Eye, Ear, Nose and Throat section of the North Sector General Hospital for three years in Hawaii, in connection with which he received the Bronze Star.

He is a Fellow in the International College of Surgeons, a Life Member of the New York Academy of Science, a member of the Pan-American Association of Ophthalmology, the American Medical Association, the Southern Medical Association and the Southwestern Medical Association.

He and his wife and their daughter, Nancy, seven, reside at 916 E. Blanchard St. in El Paso.

International Academy of Proctology To Meet In April In Chicago

Plan now to attend the 8th Annual Teaching Seminar of the International Academy of Proctology at The Drake, Chicago, Illinois, April 23 to 26, 1956. The International, National, and Local Program Committees are planning an unusual seminar on anorectal and colon surgery. There will be special emphasis on anorectal presentations, and on panel discussions, as requested by those who attended the New York meeting in 1955.

Eminent speakers from all parts of this country and abroad will present interesting papers and motion picture demonstrations of their personal techniques. Mexico is expected to be very well represented at this meeting.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

By Andrew M. Babey, M. D., Las Cruces, N. M.

1. "It is, of course, not new for the family doctor's help and advice to be enlisted in dealing with the stresses which tend to break up the family; but, as these stresses have enormously increased of recent years, so must the doctor be better prepared and more willing to treat the early stages of family-breakdown before it is too late. He should come to regard a family which disintegrates with the same concern as a patient who has failed to recover from physical illness." Richard W. B. Ellis; "Initiation"; *The Lancet;* August 27, 1955; p. 404.

2. "Learning medicine is like learning to play a game. You should always, if you can, play tennis, for example, with people rather better than yourself." A. E. Clark-Kennedy; "How To Work"; *loc. cit.;* p. 405.

3. "Never miss clinical opportunity. Go into the wards whenever you can. Stay there as long as you can. Stop there until Sister bundles you out. Go to outpatients as often as you can, and stay *there* as long as you can. Clinical experience can only be organized for you up to a certain point. Therefore, hang about waiting for something to turn up. If you wait long enough, something will turn up." A. E. Clark-Kennedy; *loc. cit.;* p. 405.

Clinical Memory

4. "Remember, you must cultivate the art of clinical memory. Again and again the logical approach to diagnosis (which you must always attempt) breaks down and, when everyone else is stuck, someone remembers having seen a case just like that before! Indeed, being a good clinician, which every practicing doctor must strive to be, depends largely on clinical memory." A. E. Clark-Kennedy; *loc. cit.;* p. 405-406.

5. ". . . a moment's thought reveals that action always depends on the degree of probability of a diagnosis being right, and the relative improbability of some less likely but possibly more dangerous condition. Indeed, good clinical medicine depends on right estimates of probability. Maybe you don't approve of betting; and, in point of fact, I seldom bet, but an occasional clinical bet will compel you to make up your mind in a way that nothing else will." A. E. Clark-Kennedy; *loc. cit.;* p. 406.

6. ". . . you must start thinking diagnostically the moment you start taking the history, otherwise you won't get the right history (histories seldom take themselves), because you won't know what questions to ask or how to ask them." A. E. Clark-Kennedy; *loc. cit.;* p. 406.

Diminishing Returns

7. "Remember, too, that reading obeys the economic law of diminishing returns. You cannot read for more than a certain length of time, and the first hour, once you have got started (I am afraid that a reading policy demands cultivation of some self-discipline), pays a larger dividend than the second. So have 'stuffy' and 'light' reading running concurrently, the former for the first and the latter for the second part of your working evening." A. E. Clark-Kennedy; *loc. cit.;* p. 407.

8. "I am sure that already you have noticed that there is a type of doctor who, by all the rules of Medes and Persians, and according to all the textbooks, treats his patients correctly and wisely — yet they dislike him. On the contrary, there are those whose methods cause one to whistle through one's teeth with horror, yet, whatever the outcome of their administrations, their patients will never leave them. 'Why is this?'" Ronald Gibson, "Introducing the Family Doctor"; *The Lancet; loc. cit.;* p. 410.

9. ". . . I must obviously describe these characteristics, although to do this properly would take up a lecture in itself. In the main they can be divided into two groups of three . . . . The first inseparable triumvirate is compassion, sympathy, and understanding. The ability to feel for and be as one with the patient in his illness, and to get it across to him that, once having consulted you, he is no longer alone in the struggle." Ronald Gibson; *loc. cit.;* p. 410.

Compassion, Sympathy, Understanding

10. "As the years go by one is introduced to more and more human problems. One's tolerance grows and one's compassion is intensified. The words left unspoken in the history, conveyed, as it were, by the worried look, begging you to understand that more could be said if it did not entail possible disloyalty to a husband or child, lack of appreciation of the mother-in-law living on the premises, inability to cope with the house-keeping, and so on; the little human displays that have to be put up, the fences to hide poverty or unhappiness from neighbours; the deaths and separations in the family; all mixed with the happy things, such as births and weddings and younger generation achievements. All these appear in the surgery sooner or later, wrapped up in some obscure form or another. The majority of them are crying for compassion, sympathy, and understanding. Quite often treatment can stop after a display of one or more of these three — nothing more is needed." Ronald Gibson; *loc. cit.;* p. 411.

11. ". . . here we come to our second group: the all-important non-material agents, faith, hope, and love. I am not mocking, as I am sure you will acknowledge, when I say that you *must* explain to a patient why you are giving him a certain medicine." Ronald Gibson; *loc. cit.;* p. 411.

Consultant Build-Up

12. "The consultant does not depend so much for his success on these agents, he relies more on the build-up you give him. You know the sort of thing: 'You'll find him a bit abrupt, Mrs. Jones, but don't mind him. He's incredibly clever, and knows your sort of case inside out'." Ronald Gibson; *loc. cit.;* p. 411.

13. "Remember that it is not a sign of weakness to call in a consultant. Quite the contrary. (May I hasten to add that I would regard it as much more a sign of weakness to accept the consultant's opinion quite blindly and quite against one's better judgment. I can think of three recent episodes in my own partnership where we have had politely to disagree with the expert, with gratifying results). Never forget that you know the patient first and the disease afterwards. Your expert colleague looks only at the disease, he knows not the patient, therefore his handicap is phenomenal. It may well prove too much for him." Ronald Gibson; *loc. cit.;* p. 411.

14. ". . . when you deal with a child, never tower above him; kneel, sit, or lie down, so that your face is on a level with his; never get straight down to business without a preliminary chat — with the child, not his parents." Ronald Gibson; *loc. cit.;* p. 411.

Doctor's Wife

15. "Let me end by mentioning one person who can be the greatest asset of them all — the doctor's wife. Tactful and diplomatic, helpful and sympathetic, patient and comforting, whether she is tackled in the street or on the telephone she can double the size of the practice and halve the amount of her husband's work. What would we do without her, I wonder?" Ronald Gibson; *loc. cit.;* p. 412.

16. "At least once a day a patient will say: 'Of course, doctor, I know this is due to my age.' Woe to you if you agree. The answer to that remark is 'Nonsense!' — and don't just say it, mean it." Ronald Gibson; *loc. cit.;* p. 412.

17. "Often these so-called neurotics are charming people, sensitive, generous, perhaps over-self-centered, solitary children, spoilt and coddled in past years when such extravagances were feasible; unrealistic, maladjusted, quite incapable of facing up to the stress and strain of modern life. Their greatest sin is that they take up too much of the doctor's time. But insufficient time to treat them is no excuse for an unsympathetic or irritable manner. We should always try to have a few minutes to spare each day for the lonely person who just wants to be talked to, to be advised, or even, quite often, to be instructed. A dismissal after ten minutes of chatting is far more effective and lasting than a hurried prescription after two minutes reproach." Ronald Gibson; *loc. cit.;* p. 413.

Neurotic Advertising

18. ". . . remember that the neurotics will be either your best advertisement, or your worst. Willy-nilly they constitute the group of people who talk the most; it is nice to arrange that they say the right things!" Ronald Gibson; *loc. cit.;* p. 413.

19. "NEVER during the whole of your years as a family doctor let a woman in the menopause think that she has come to you in vain, or that, because of your light-hearted and unsympathetic attitude to her peculiar symptoms, she can never come to you again . . . . they will never forget you and will be your most grateful patients." Ronald Gibson; *loc. cit.;* p. 413.

20. "How can one put a rest, or a holiday with change of environment, into a box or a bottle? Well, it has to be done, for nearly all these patients are women. They are bearing the burden of the home, the meals, the kids, and in far too many cases, of earning an addition to the family income to pay for the little extra on housekeeping, or the installments on the furniture, the television, or the car." Ronald Gibson; *loc. cit.;* p. 413.

In Bed Too Long

21. "Finally, if you try to keep her in bed too long you will find that she has timed your visit to a nicety so that she is in bed for a maximum of ten minutes before you arrive, and thirty seconds after the car has driven away. (One has only to be a family doctor for a week to realize of what poor stuff we males are made. What is needed is a trade union for housewives — against it the hydrogen bomb would appear insignificant!)" Ronald Gibson; *loc. cit.;* p. 413.

22. "And this is the task of the busy family doctor. He is the magician who produces the early carcinoma and presents it on a plate to the waiting surgeon, who will reap the reward for saving the patient's life as assuredly as he will gain the sympathy of all the friends and relatives if the presentation is left until too late. (May he be forgiven for that shrug of the shoulders which expresses only too clearly how much he could have done had he been called in only a week or two earlier!)" Ronald Gibson; *loc. cit.;* p. 413.

23. "Family doctors may grumble, and be full of pious misery in the winter months, but they are never so happy as when full of self-pity, never so contented as when overworked, and never so miserable as when on holiday away from the all-absorbing drudgery of medicine." Ronald Gibson; *loc. cit.;* p. 413.

Four Types

24. "Let us first consider the timing of the appearance of the evidence of ability. From watching a number of careers in medicine I gather the impres-

sion that, in point of timing, emergent ability is of four general types: the Rampart, the Plateau, the Slow Crescendo, and the Late Blooming." Alan Gregg; *Vet. Administration Tech. Bull.;* August 20, 1952, 10-83 p. 1.

25. "The Rampart type in its extreme form suggests the adjective "precocious." It shows a rapid rise to an early maximum sometimes attained at about the time the M. D. is obtained . . . . . My witty and perceptive classmate, George Hoyt Bigelow, said to me a year or so after we had graduated, "Alan, I've made the greatest mistake a young man can make!" Impressed by such a tragic declaration, I asked him what he had done. "I've shown promise," he replied. "I haven't promised anything myself, but, damn it, I've 'shown promise! — promise' formulated by older men and now saddled on me." " Gregg; *loc. cit.;* p. 2.

26. "I could have called the Rampart type by the invidious name skyrocket — up with a blaze of glory and down with a dull thud — but I hate the facile ignorance that passes such summary opinions on mere appearances . . . . . And still, in a statistical sense the Rampart type exists, with later years often marked by resignation, embitterment, self-pity, or, as often, by patient self-acceptance." Gregg; *loc. cit.;* p. 2.

Plateau Type

27. "The Plateau type of ability declares itself equally promptly but maintains itself with equanimity and steady continuity. They prove dependable, consistent performers, serene, solid beautifully free from bad luck or bad management." Gregg; *loc. cit.;* p. 2.

28. "The Slow Crescendo shows steady, slow improvement throughout his professional life. Being a slow starter, he has created neither great expectations nor consequent disappointment. Usually the Slow Crescendo type has a singularly shrewd knowledge of the pitfalls of versatility and of all of what Bill Palmer used to call life's gilded lemons." Gregg; *loc. cit.;* p. 2.

29. "The rest of us usually overload him with administrative duties — or try to — in our wonder and lazy admiration. It is a lethal sort of compliment we pay — distinction and extinction in one move. Let me add that ours is a big country now, equipped with such facilities for travel and communication as to exhaust the energies of many and many a man with duties so glibly described as being "at the national level." In smaller countries he can and does enjoy a less exhausting and better-balanced life." Gregg; *loc. cit.;* p. 2.

Late Bloomers

30. "Though the Slow Crescendo type is generally recognized in time to be exploited, the Late Blooming type usually escapes attention and thus enjoys a freedom from importunities and demands that in many ways is enviable. He manages to mix surprise with success, since his ability shows itself unexpectedly and so late as to excite but little jealousy and few dependents to abuse his time." Gregg; *loc. cit.* p. 2.

31. "Indeed, one of the most helpful bits of advice I ever got on my way through medical school was from Richard Cabot: "If you ever thought that the preparation of medicine is a hundred-yard dash and that what your record is in the medical school is all important, just stop thinking that way. It is more like a two-mile race. I wouldn't think the time for estimating your abilities could sensibly come much before you are 40 years old." " Gregg; *loc. cit.;* p. 3.

32. "You have rewarded precocity, which may or may not be the precursor of later ability. So, in effect, you have unwittingly belittled man's cardinal educational capital — time to mature." Gregg; *loc. cit.;* p. 3.

Early Maturity

33. "When children grow up anywhere in a cultural minority — the children of American missionaries in China would serve as another example — they mature earlier than the children living in a uniform and homogeneous society." Gregg; *loc. cit.;* p. 4.

34. "A wise friend of mine once observed, "It's queer, isn't it, that praise from an elderly person almost never turns your head, whereas praise from contemporaries or juniors may very easily spoil you." Gregg; *loc. cit.;* p. 4.

35. "I remember asking President Eliot of Harvard, whose discrimination in picking faculty members was remarkable, what was the best criterion to follow in choosing a man for his ability. He replied that the best single criterion, though not infallible, is the judgment of his contemporaries." Gregg; *loc. cit.;* p. 4.

36. "When you have remarkable opportunities, you have equally notable obligations. Or at least among those whose respect you want, your opportunities, if seized, create expectancy. And, if unusual experiences do not call forth your best abilities, then you forfeit the respect and interest of people who would have reacted to such experiences with the best they could summon. Gregg; *loc. cit.;* p. 4 - 5.

Honors and Degrees

37. "Honors and degrees carry too little expectancy — they have the general odor of receipted bills, certificates of past performances, or rewards, or honorable scars, or epitaphs. Gregg; *loc. cit.;* p. 5.

38. "In contrast to the English universities, we do curiously little to bridge the actually narrow gap between fine minds in young men and fine minds in older men. Surely the brilliance or nature of a star is more important than the time it rises." Gregg; *loc. cit.;* p. 5.

39. "For I would hold that the doctor's life, too, is becoming, not being, and the natural history of increasing medical maturity deserves reflection and

(Continued on Page 50)

ORIGINAL ARTICLES

The Treatment of Minimal Fragmentation and Early Osteochondrosis of the Tibial Tubercle or Osgood-Schlatter's Disease *

By W. Compere Basom, M. D., M. S., in Orthopaedic Surgery, El Paso

During World War II while stationed at a large General Army Hospital, the author found that there was a definite incidence of hospitalization because of chronic Osgood-Schlatter's disease. Certain aspects of military field duty and basic training activities such as crawling through the infiltration course are definitely difficult to perform properly with one or both tibial tubercles tender and enlarged. In fact, there are tasks in civilian life that also cause difficulty. However, the patient can usually adjust his work without reporting to the orthopaedic surgeon.

Chronic Cases

The treatment of the old chronic cases was not always satisfactory regardless of the method used. In other words, after all types of therapy were utilized, not all of the chronic cases still could perform all phases of full field duty, at least over a sufficiently long period for satisfactory military service. Therefore, the opinion was established that Osgood-Schlatter's disease of the tibial tubercle constitutes a definite disability in the chronic adult form, at least potentially.

It may become symptomatic and thus rated as a defect under certain aspects of full military field duty. Since the treatment of this chronic form is not entirely successful, prevention of this condition is important. It is hoped that when this condition arises in the young individual, the treatment of the early minimal condition is carried out thoroughly and completely in order to attempt to avoid the chronic aspects of this condition.

Early Diagnosis Important

The acute condition is a problem for the orthopaedists, both civilian as well as military (dependents). It is the author's opinion that this condition should be diagnosed early and treated until healing is as complete as possible. In this way, the incidence of chronic cases will probably be lowered.

After a review of the available medical literature and after a discussion of the subject with various orthopaedic surgeons it is apparent that this opinion is not shared unanimously. It is hoped that others will also use this method of therapy to be described and thereby help determine whether or not this will lower the incidence of chronic Osgood-Schlatter's disease and thereby aid those who may need to perform duties requiring a normal tibial tubercle.

Treat Early

In the acute cases, most of the patients are presented early and ordinarily the parents, at least, are cooperative in our practice. Most of these patients are boys and they are over-active. In all probability, trauma therefore, plays quite a part in the origin of this condition. The average patient is usually seen after several weeks duration of tenderness and enlargement of the tibial tubercle. The early roentgenogram studies usually reveal only minimal fragmentation of the tibial tubercle.

A cast is applied with shoulder strap. The cast extends from the upper thigh to the lower leg just above the ankle and is well padded at the lower level and also about the knee; otherwise it is a light type. The shoulder strap is only utilized when the patient is in the upright position because when the patient is recumbent or horizontal there is no tendency for the cast to drop toward the ankle and thereby irritate this region.

Cylinder Cast

This definitely gives good support to the tibial tubercle area and yet the patient is able to go along with his school work and other necessary activities. There is a distinct clinical impression that practically all of these cases can be treated successfully and that the roentgenograms after a period of six weeks to three months or more, will reveal a practically normal tibial tubercle area. At six weeks the cast is removed and roentgenographic studies are made.

If healing is not complete, another plaster cylinder is utilized for another six week period. Another roentgenographic study is made. The routine is continued until healing is completed both clinically and roentgenographically.

*Presented at the meeting of the Orthopaedic Surgeons in the Southwest, in conjunction with the Arizona Chapter of the Western Orthopaedic Association and during the meeting of the Southwestern Medical Association in El Paso.

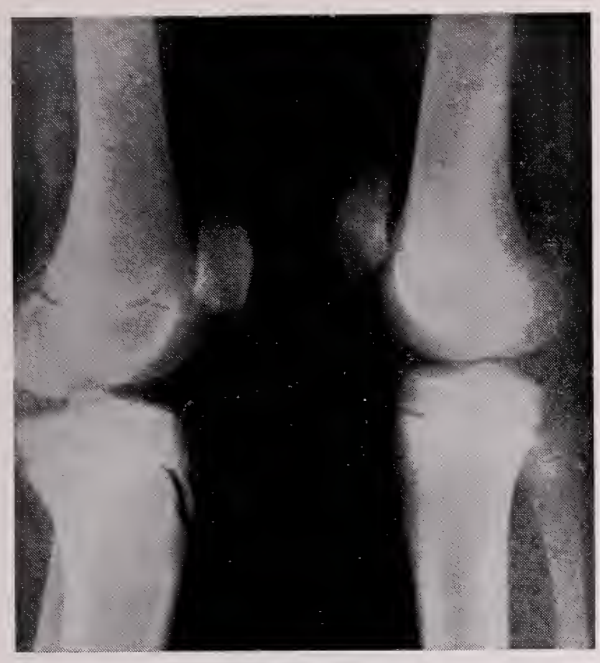


Figure 1



Figure 2



Figure 3



Figure 4

Illustrations

Case 1. H. B.: This patient when seen in 1948 had bilaterally enlarged, (Fig. 1) tender tibial tubercles. This patient did not have any treatment and x-ray eximinations were made again in August of 1954 approximately six years after the onset of the (Fig. 2 & 3) disability. Both tibial tubercles revealed abnormalities and fragmentations with irregularity. Both tibial tubercles were tender and definitely symptomatic. The patient defintely had difficulty.



Figure 5



Figure 7

Case 2. L. F.: This patient was very cooperative. He was seen very early in the course of his tibial tubercle enlargement, tenderness with the radiological evidence of fragmentation. (Fig. 4) A plaster cylinder cast was applied and six weeks later firm consolidation by x-ray was noted. (Fig. 5) Also the tibial tubercle had healed by radiological examination.



Figure 6



Figure 8

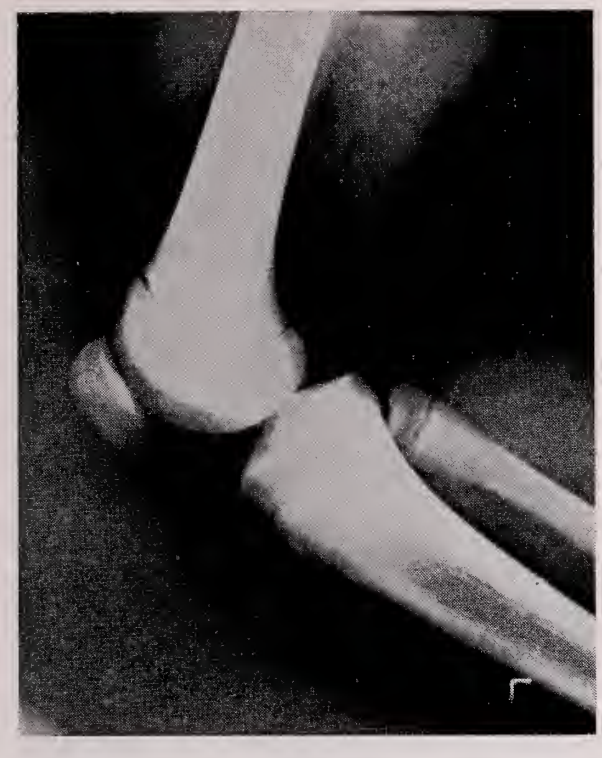


Figure 9



Figure 10

Case 3. R. N.: This patient was not cooperative and it was difficult to keep casts on him because he was so active he would break them continuously. In the early stage there was definite fragmentation of the tibial tubercle. (Fig 6) Three months later after only fairly satisfactory management the tubercle improved. (Fig. 7) Six months after that there was slight fragmentation of the tubercle noted by x-ray. (Fig. 8) The other illustration (Fig. 9) is of the opposite knee for comparison purposes taken at the same time. Possibly if this patient had been cooperative there would have been no minimal fragmentation. He did have a good result as far as he was concerned and had practically no symptoms. The last visit was made because he wanted a medical release permitting him to play football.

Case 4. J. M.: This was a cooperative case but healing was slow. It was necessary for prolonged cast protection to obtain a good result. The first x-ray revealed definite fragmentation of the tibial tubercle. (Fig. 10) At six weeks the fragmentation seemed to be healing but there was still some evidence of the old fragmentation. (Fig. 11) A second six week period revealed very good healing. (Fig. 12) A final check-up examination approximately six months later reveals a very excellent end result. (Fig. 13)



Figure 11



Figure 12



Figure 13

Case 5: Before and after six weeks in the plaster. (Figs. 14 & 15)

Figures 16 and 17 illustrate the type of case used in this series of cases.

Conclusions

1. Patients with early fragmentation or Osgood-Schlatter's disease or osteochondrosis of the tibial tubercle, may be treated with a plaster cylinder.

2. This cast should extend from the upper thigh to the lower leg, just above the ankle. It should be padded adequately and should have a shoulder strap attached to the upper end to get proper suspension and proper position for the upright position of the patient.

3. Cast treatment management should be continued until roentgenological check-up reveals complete healing of the tibial tubercle.

4. A six weeks to three months check-up, clinically and roentgenographically should be utilized after treatment has been discontinued, to insure the fact that a good result has been obtained.

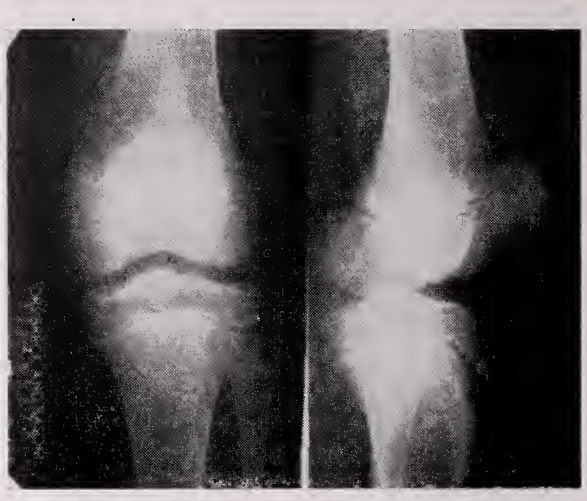


Figure 14



Figure 15

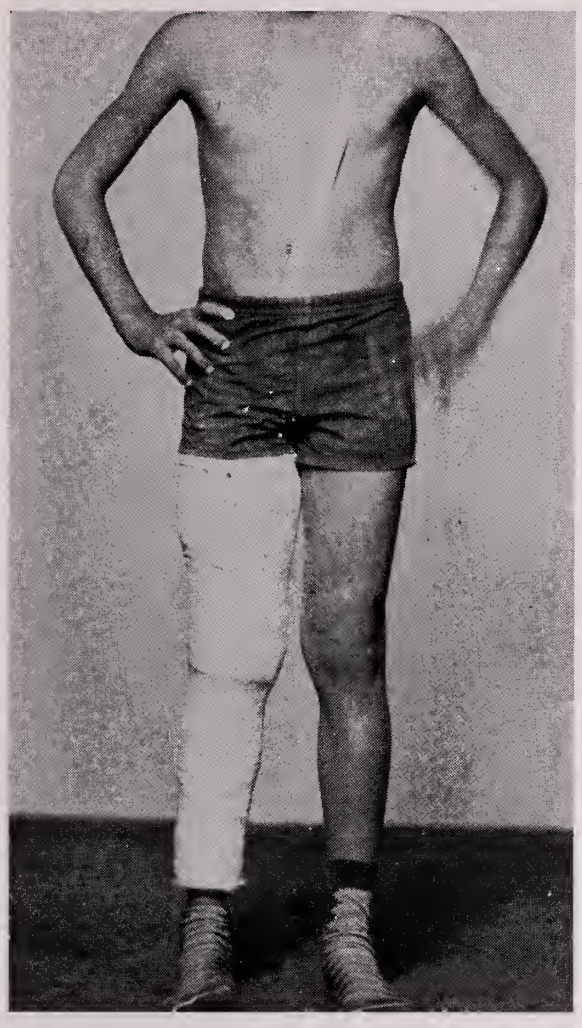


Figure 16



Figure 17

5. It is hoped that this thorough method will be utilized generally and thereby possibly lower the incidence of chronic Osgood-Schlatter's disease, inasmuch as this condition contributes a definite defect and does interfere with the performance of certain tasks required particularly in full field duty in the Military Service.

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EDITORIAL

Social Security—Big Issue In '56*

Every physician who is conscious of his duties as a citizen should now be taking an active interest in a timely issue which the American Medical Association considers of great importance — not only to the medical profession but to all of the American people.

That issue is HR 7225, a bill passed by the United States House of Representatives last summer near the end of the Congressional session. This bill, known as the Social Security Amendments of 1955, was first rushed through the House Ways and Means Committee without public hearings. Then it was passed in the House, by a vote of 372 to 31, under a suspension of the rules which barred amendments and limited debate to 40 minutes. The Senate Finance Committee, however, refused to take hasty action on a bill of such major importance. After hearing the many serious questions raised by Mrs. Hobby, then Secretary of the Department of Health, Education and Welfare, the Committee decided to hold extensive public hearings during the second session of the 84th Congress.

Politically Attractive

Just what is this legislation that appears to be so politically attractive to individuals with an eye on the 1956 elections? Why was the House majority leadership so determined to avoid open hearings and normal debate? Let's take a brief look at the main provisions of the bill.

This is the legislation which would lower the Social Security retirement age for women from 65 to 62; extend monthly benefits for permanently and totally disabled children beyond the age of 18; expand compulsory social security coverage to all self-employed professional groups except physicians, and raise social security taxes over and above the increases already scheduled for the next twenty years. Those provisions alone demand careful study of their effects on the philosophy, scope and financial stability of our social security system.

Controversial Section

The most controversial section of the bill, however, is the one which would make permanently and totally disabled persons eligible to receive their social security retirement benefits at age 50 instead of 65. It is this section which is of particular concern to the medical profession. It is of far greater concern than the question of voluntary or compulsory coverage of physicians under the social security system. That is a separate issue which we are not discussing in this question of just what social security should accom-

editorial. The plan for a national system of permanent and total disability benefits has far more serious implications for medicine and the nation.

It raises questions such as these: Is there any real need for a federal program? What are the facts on permanent and total disability? Won't this duplicate or overlap existing programs of assistance and rehabilitation? What effect will cash handouts have on a patient's incentive to be rehabilitated? Won't this extend federal control over physicians? — and, finally — How will this affect the future of medical practice? Will this lead, step by step, to the lowering and eventual elimination of the age-50 eligibility requirement; then, cash benefits for the dependents of those who are permanently and totally disabled; then, a temporary disability benefits program; then, cash benefits or direct government payments for hospital or medical costs, and then, ultimately, a full-fledged system of government health insurance?

Grave Questions

These are but a few of the many grave questions which already have been raised concerning this legislation. As physicians, we must be concerned over the medical aspects of the problem. As citizens, we also must be concerned over the trends and implications in the never-ending expansion of our social security system. The minority report of the House Ways and Means Committee expressed it this way:

"We do not believe that our committee has discharged its obligation to either the Congress or to the American people by its brief and closed-door consideration of this vital legislation. We have sought to point out the grave social and economic implications of the bill. We have dwelt at some length with the staggering ultimate costs of this developing program, because we do not believe that either the Congress or the public has any conception of its magnitude."

Profound Influence

Our social security system now has reached the point where any further changes may have a profound influence on the nation's economic, social and political future. The time has come to face up to the plish and just where it should stop. The Association strongly *urges* that the social security issue be taken out of the arena of vote-catching politics; that there be an objective, thorough study of social security in all its present and future aspects, and that the facts and realities emerging from such a study be used as the basis for a sound national decision on this vital issue. It especially protests precipitate action on the complex question of disability without thorough investigation of alternative mechanisms.

In our opinion, that is a reasonable, responsible policy that deserves the moral and intellectual support of every physician.

*This editorial prepared by the American Medical Association for publication in regional and state medical journals.

Southwestern Surgical Congress Scheduled In Tucson April 16-18

The Southwestern Surgical Congress will hold its annual meeting in Tucson, April 16, 17, and 18. The Congress covers Arizona, Arkansas, Colorado, Kansas, Missouri, New Mexico, Texas, Oklahoma, Utah, and Wyoming.

Drs. H. D. Cogswell and John R. Schwartzmann are in charge of local arrangements for the meeting.

Officers of the Association are Dr. Charles Runtree, president, Oklahoma City; Dr. Fred Crock, vice-president, Ft. Smith, Arkansas; Dr. John Goode, Dallas, president-elect; and Dr. Charles M. O'Leary, Oklahoma City, secretary-treasurer.

Expect 5,000 Family Doctors At General Practice Meeting

More than 5,000 of the nation's family doctors will attend the Eighth Annual American Academy of General Practice Scientific Assembly, March 19-22, 1956, in the Washington, D. C., Armory.

During the four-day scientific meeting, the doctors will hear 26 outstanding speakers discuss important subjects ranging from cardiac emergencies to primary wound repair. They will visit more than 60 scientific and 250 technical exhibits. Highlights of the program, which has taken more than a year to plan, include two live clinics, a symposium on obstetrics and an address by Surgeon General Leonard Scheele. Special tours through the National Institutes of Health, Bethesda, Md., have been arranged.

The Academy's policy-making Congress of Delegates will convene at 2 p. m., Saturday, March 17. All sessions of the Congress and many social functions will be held in the Hotel Statler.

Wednesday evening, March 21, following induction ceremonies for Academy President-elect J. S. DeTar, M. D., Milan, Mich., more than 3,000 guests will attend a President's reception and dance honoring John R. Fowler, M. D., Barre, Mass., president of the Academy.

Pan American Ophthalmologists To Convene In Chile In January, 1956

The Fifth Pan American Congress of Ophthalmology will be held in Santiago, Chile, January 9 to 14, 1956, under the auspices of the Pan American Association of Ophthalmology, of which Dr. Moacyr E. Alvaro, Sao Paulo, Brazil, is president. In accordance with a custom of inviting a distinguished ophthalmologist of the host country to preside, Dr. Cristobal Espildora Luque of Santiago, will be president of the Congress.

The scientific program will consist of eleven symposiums, in which the speakers will be in general divided between physicians of the United States and Canada and those of Mexico, Central and South America.

Six-Day Postgraduate Course Is Scheduled In Colorado

A six-day postgraduate course, called a General Practice Review, is scheduled for January 16-21 in the University of Colorado Medical Center in Denver. It is being sponsored by the Clinical Department and the Office of Postgraduate Medical Education at the University of Colorado Medical Center.

The six-day course is arranged as a review and a discussion of highlights of new developments in six areas of importance in the general practice of medicine. By devoting one day to each area, those unable to attend the entire course may attend selected days of their choice. The postgraduate course will be approved for credit by the American Academy of General Practice for the total number of hours attended by the individual registrant.

Hawaii Medical Association To Celebrate Centennial

Treat yourself to a week or two in Hawaii in the springtime, why don't you?

That's an invitation it's a pleasure to pass along. It comes from the Hawaii Medical Association, whose members are celebrating their organization's Hundredth Anniversary this coming April 22 to 29 in proper "Hawaii" as well as medical fashion. There will be a short but worthwhile professional program on Monday and Tuesday mornings, a spectacular Centennial Celebration Pageant Tuesday night, and a traditional *luau* (Hawaiian feast to you Easterners) Thursday night, with Polynesian entertainment.

This is the best time of the year to visit America's island paradise — clear, balmy days and cool, refreshing nights; spring flowers in profusion on the ground and in the trees; lovely island m— but you have the idea now, surely. Hawaii in the spring is always the greatest, and this is your chance to tie it into a professional meeting. It follows the American College of Physicians' session in Los Angeles, too. Write the Hawaii Medical Association, 510 South Beretania St., Honolulu 13, Hawaii, for reservation application forms.

New Mexico Medical Society To Meet In Roswell, May 2-4

Annual meeting of the New Mexico Medical Society will be held in Roswell, N. M., May 2, 3 and 4, 1956.

Dr. Earl L. Malone of Roswell is president. Members of the convention committee are Dr. John F. Conway, Clovis, N. M., Dr. Albert Lathrop, Santa Fe, and Dr. Coy Stone, Hobbs, N. M.

Miscellaneous, Truths . . . . . .

(Continued from Page 41)

honest, wide-ranging testimony. Till now we have had too few witnesses, too few and too constrained. Much the same puzzles, pitfalls, solutions, and successes confront us all, though they are too often met in the quaint delusion that we are alone and exceptional in having to work them out. They are essentially the same whether we take up medicine in China, in Italy, in Iceland, or in North America." Gregg; *loc. cit.;* p. 5.

Impersonal and Personal

40. "The treatment of a disease may be entirely impersonal; the care of a patient must be completely personal." Francis W. Peabody; *Vet. Admin. Tech. Bull.;* Section 10-85; p. 2.

41. "What is spoken of as a "clinical picture" is not just a photograph of a man sick in bed; it is an impressionistic painting of the patient surrounded by his home, his work, his relatives, his friends, his joys, sorrows, hopes and fears." Peabody; *loc. cit.;* p. 3.

42. "The popular conception of a scientist as a man who works in a laboratory and who uses instruments of precision is as inaccurate as it is superficial, for a scientist is known, not by his technical processes, but by his intellectual processes; and the essence of the scientific method of thought is that it proceeds in an orderly manner toward the establishment of the truth." Peabody; *loc. cit.;* p. 4.

Most Are Ill

43. "I doubt whether there are many people, except for those stupid creatures who would rather go to the physician than to the theatre, who spend their money on visiting private physicians unless there is something the matter with them." Peabody; *loc. cit.;* p. 4.

44. "Death is not the worst thing in the world, and to help a man to a happy and useful career may be more of a service than the saving of life." Peabody; *loc. cit.;* p. 4.

45. "The outstanding metabolic alteration in methyl alcohol poisoning is an extreme lowering of plasma bicarbonate . . . . . At present, the best explanation for the metabolic derangement seems to be that formic acid and formaldehyde, which have been shown *in vitro* to be potent enzyme inhibitors, so derange aerobic carbohydrate metabolism that intermediate acid metabolites accumulate." Ivan L. Bennett; *Vet. Admin. Tech. Bull.;* Section 10-89; p. 2.

Methyl Alcohol Poisoning

46. "There is still considerable controversy over the mechanism and the metabolic significance of acidosis in methyl alcohol poisoning, but there can be no question about the fact that vigorous treatment with large amounts of alkali is of the greatest importance and that all other measures are secondary to it . . . . . The intravenous route of administration is recommended because of its certainty and the necessity for prompt action. Doses of 150 to 200 grams of sodium bicarbonate may be needed within a few hours to reverse the acidosis, and the author has seen one patient who required 420 grams, given intravenously as a five per cent solution over a period of 28 hours, before the situation stabilized." Bennett; *loc. cit.;* p. 4.

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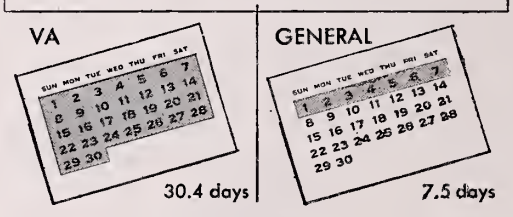
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In Viewing the VA Medical Program . . .

comparison of length of stay in VA and general hospitals
GM&S



General medical and surgical patients in VA hospitals are confined four times longer than in non-federal hospitals. VA hospitals admit patients for examination, diagnosis, and treatment, much of which is normally undertaken outside civilian hospitals. Also, VA patients often remain hospitalized throughout the entire medical treatment period, whereas non-VA patients are usually treated at home during their convalescence. This is a major factor in the tremendous cost of the VA medical program.

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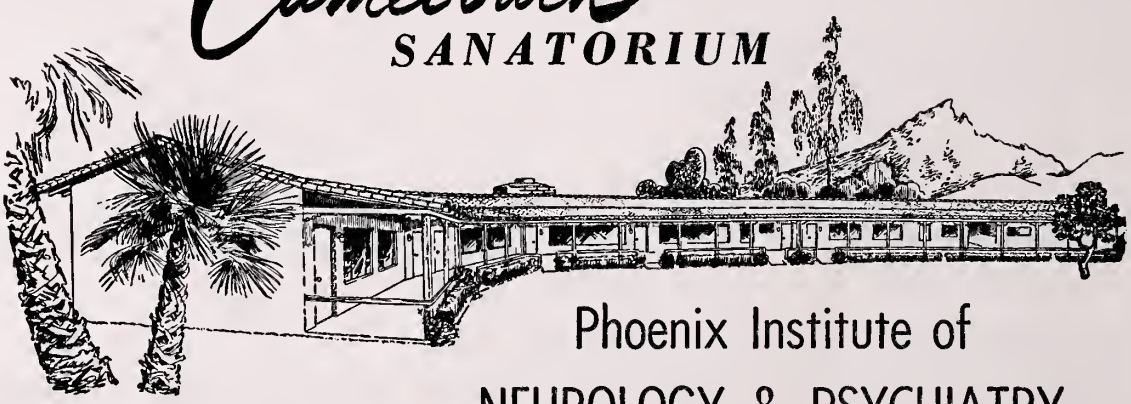
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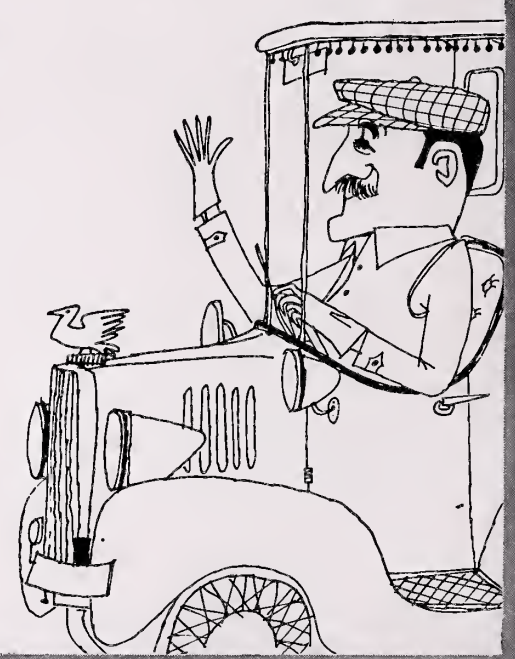
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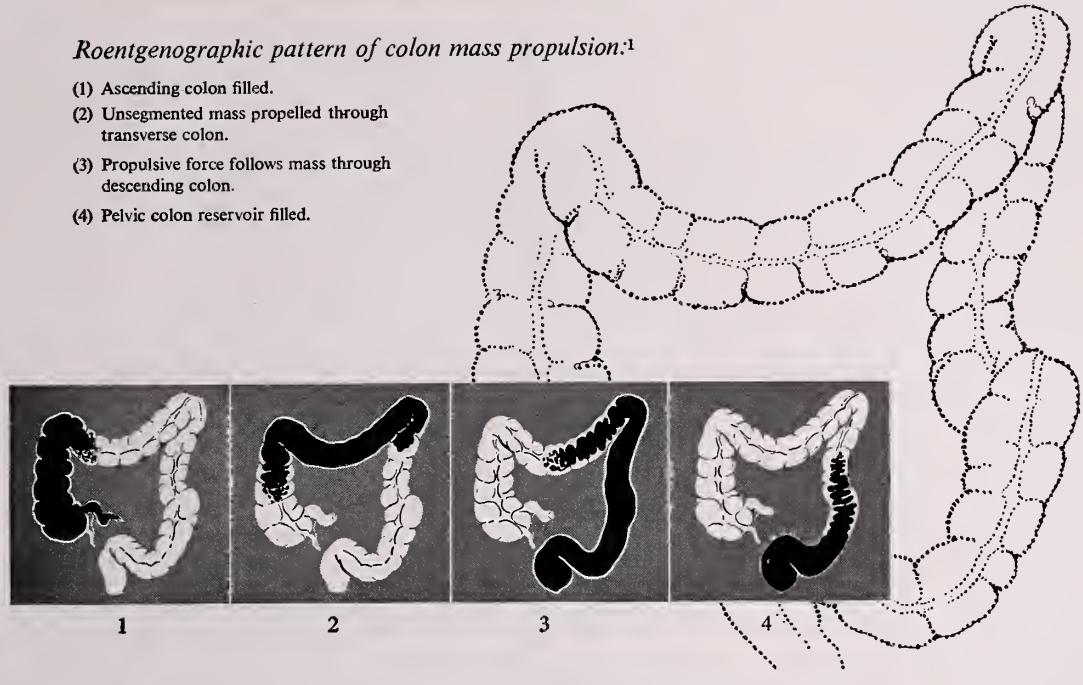
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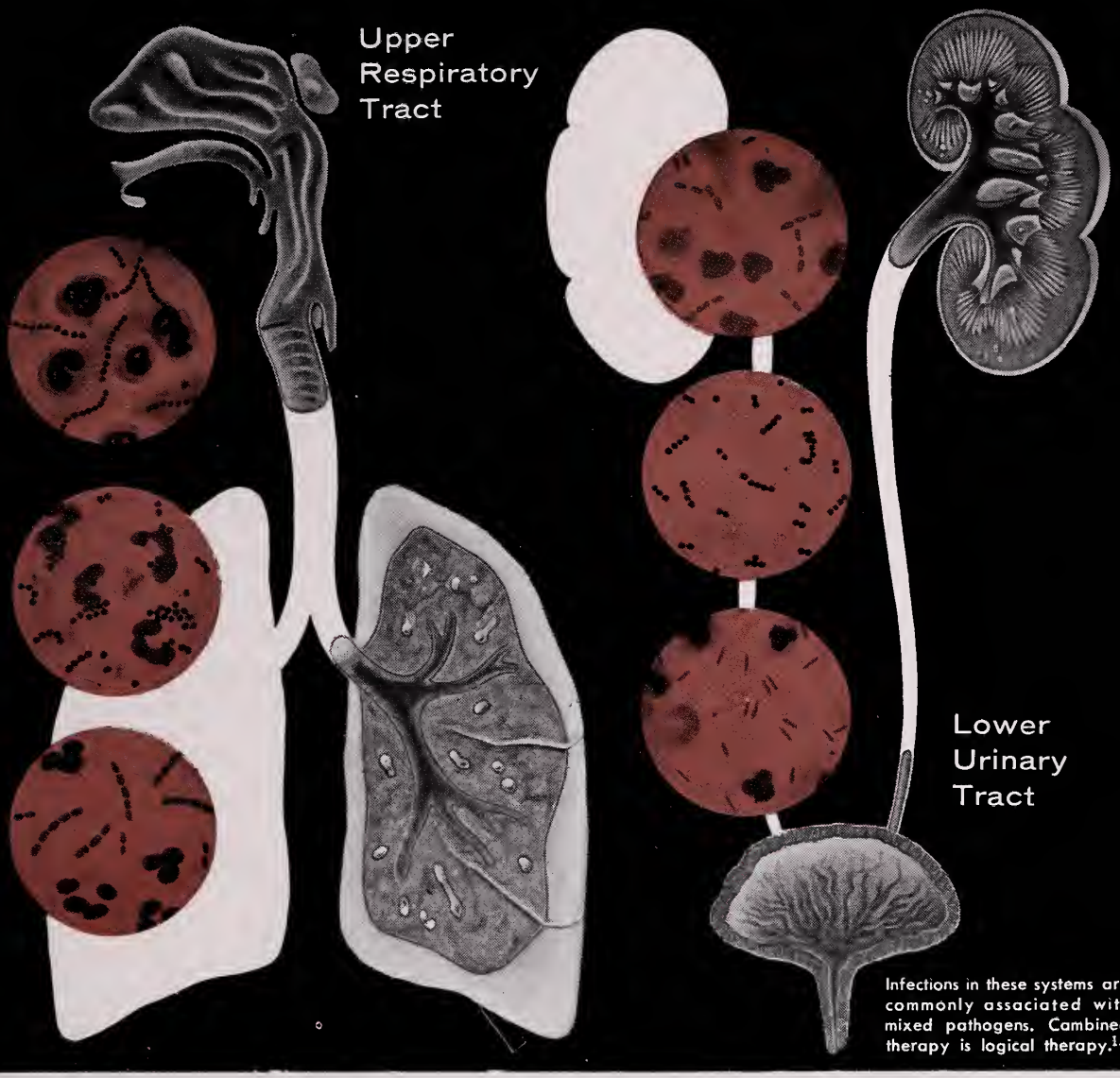
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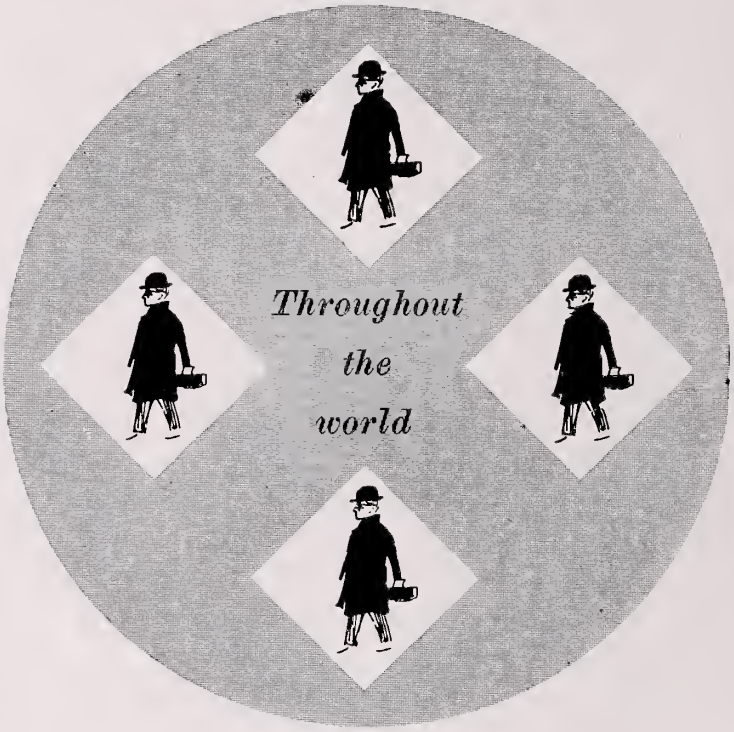
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(1) Payne, R. W.; Shetlar, M. R.; Farr, C. H.; Hellbaum, A. A., and Ishmael, W. K.: J. Lab. & Clin. Med. 45:331, 1955. (2) Bunim, J. J.; Williams, R. R., and Black, R. L.: J. Chron. Dis. 1:168, 1955. (3) Holbrook, W. P.: M. Clin. North America 39:405, 1955.

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1. Busse, E.A.: Treatment of Rheumatoid Arthritis by a Combination of Cortisone and Salicylates. Clinical Med. 11:1105 (Nov., 1955).
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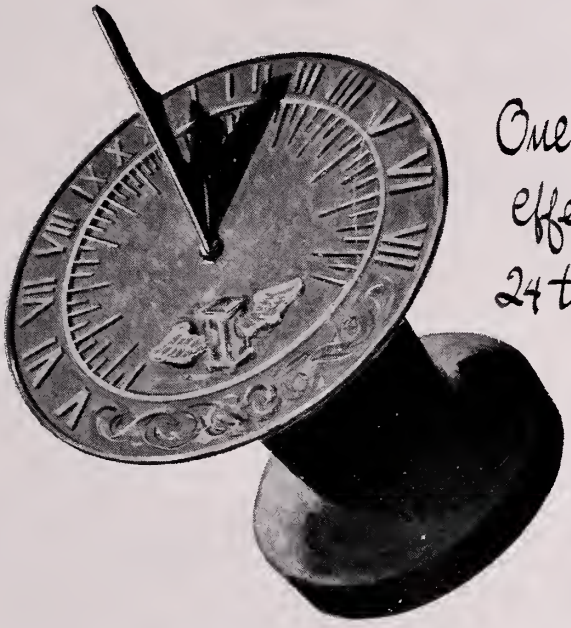


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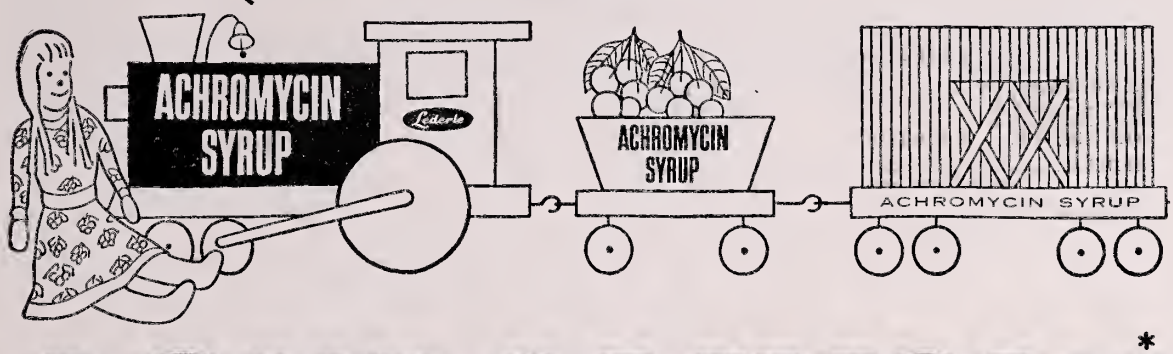
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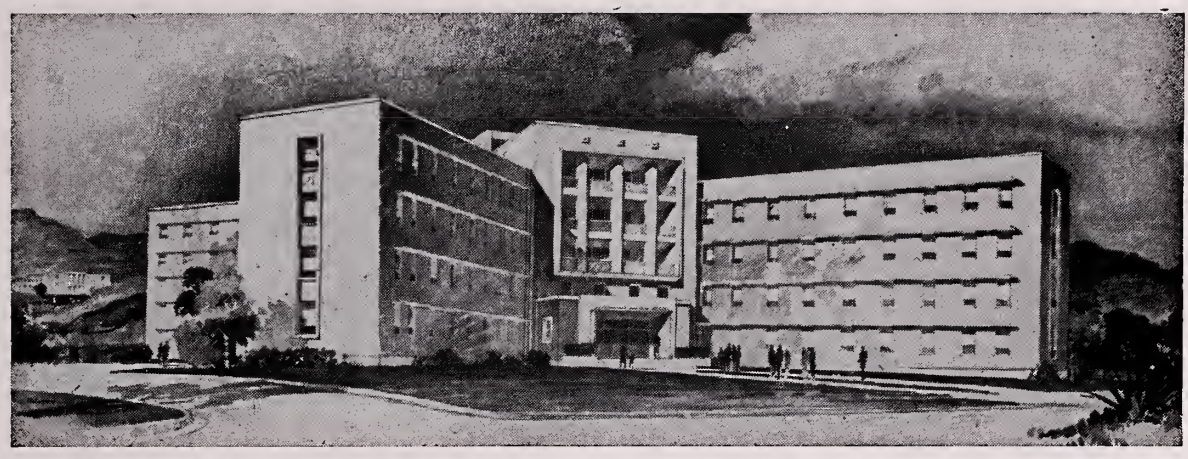
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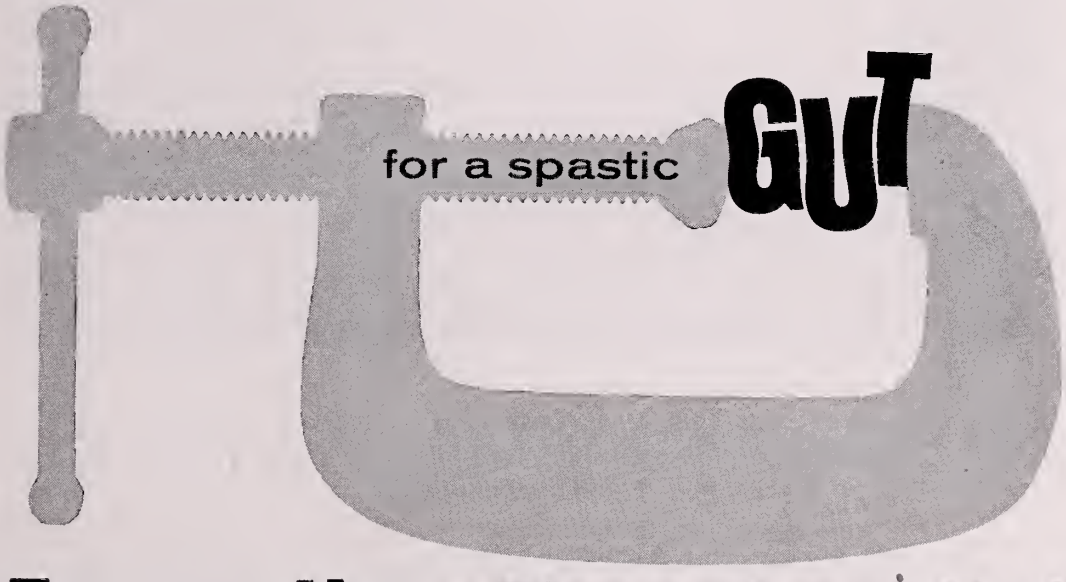
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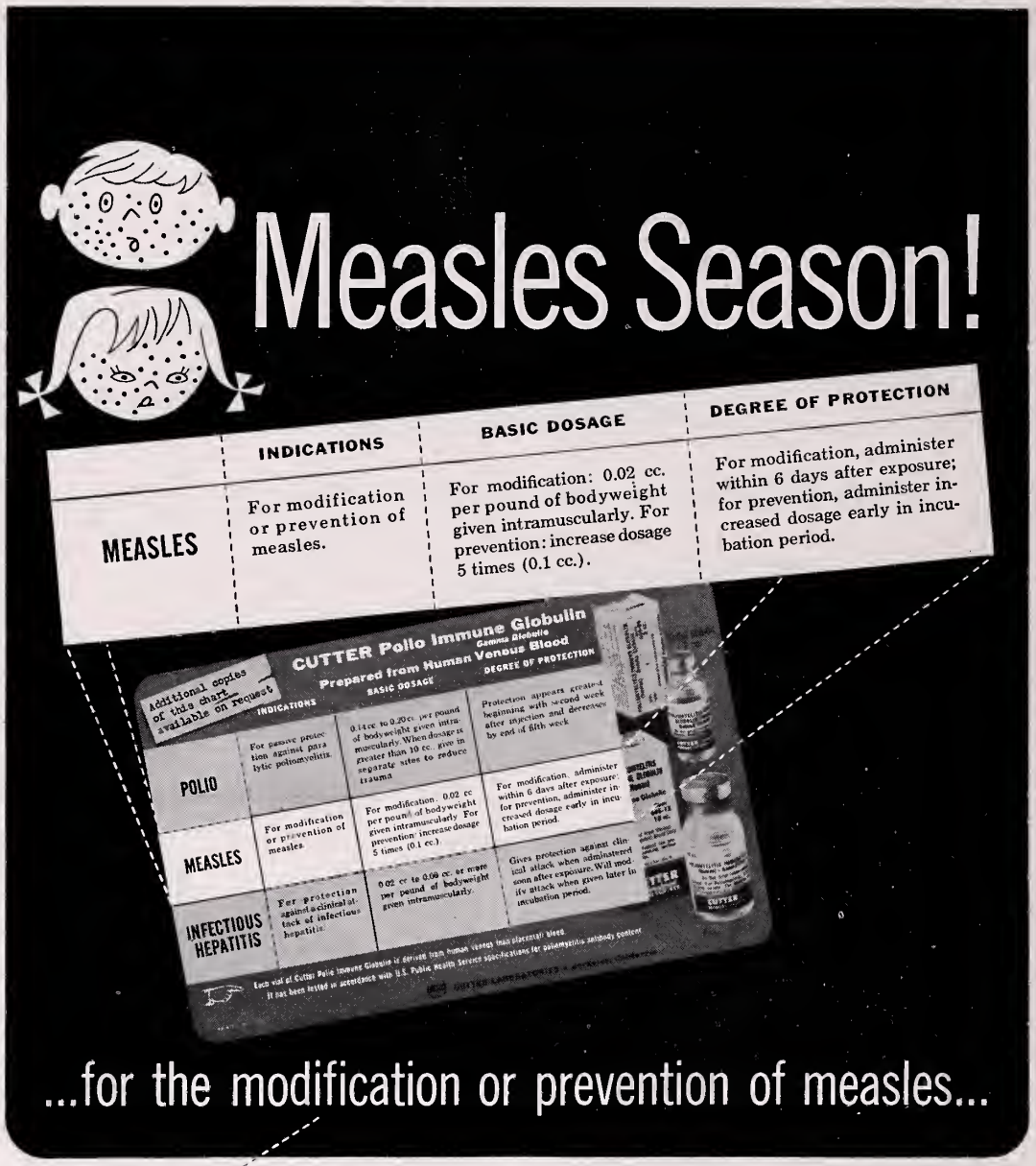
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BASIC DOSAGE
DEGREE OF PROTECTION
MEASLES
For modification or prevention of measles.
For modification: 0.02 cc. per pound of bodyweight given intramuscularly. For prevention: increase dosage 5 times (0.1 cc.).
For modification, administer within 6 days after exposure; for prevention, administer increased dosage early in incubation period.
Additional copies of this chart available on request
CUTTER Polio Immune Globulin
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Prepared from Human Venous Blood
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BASIC DOSAGE
DEGREE OF PROTECTION
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For passive protection against paralytic poliomyelitis.
0.1 cc. to 0.20 cc. per pound of bodyweight given intramuscularly. When dosage is greater than 10 cc. give in separate sites to reduce trauma.
Protection appears greatest beginning with second week after injection and decreases by end of fifth week.
MEASLES
For modification or prevention of measles.
For modification, 0.02 cc per pound of bodyweight given intramuscularly. For prevention increase dosage 5 times (0.1 cc.)
For modification administer within 6 days after exposure; for prevention, administer increased dosage early in incubation period.
INFECTIOUS HEPATITIS
For protection against clinical attack of infectious hepatitis.
0.02 cc to 0.06 cc. or more per pound of bodyweight given intramuscularly.
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Each vial of Cutter Polio Immune Globulin is derived from human tissues from placental blood. It has been tested in accordance with U.S. Public Health Service specifications for poliomyelitis antibody content.
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Southwestern MEDICINE

VOL. XXXVII FEBRUARY, 1956 No. 2

EDITORIAL

Social Security

The question of social security as it affects practitioners of medicine is one that is and will be for some time controversial. Roughly one may divide the physicians into two groups; the younger men, particularly the veterans of World War II, and the older men who are beginning to think, at least, about retiring.

Interestingly, in Massachusetts, the question of social security followed these lines. The younger men, especially the veterans, were definitely in favor of the inclusion of physicians in social security, while the older men viewed the benefits of social security with a somewhat jaundiced eye.

The American Medical Association, recognizing that social security is an actuality, in Boston voted to support and urge the creation of a well qualified commission. This commission could be either governmental, private, or both.

The commission would order an impartial study of the economic, social, and political impact of social security, both as it affects the physicians and the lay personnel. The facts which would be developed from such a study should be the sole basis for objective, non-political improvements to the Social Security Act, for the benefit of all the American People.

It would seem that it is inevitable that the American physicians will have at least some type of compensation similar to that now offered to the lay public by Social Security.

An attempt has been made to present in parallel columns arguments for and against the issue of Social Security:

Arguments of the Opponents

1. The concept that the worker should contribute his quota to society's resources, and in return receive maintenance when he cannot work, is Marxist dogma.
2. It would destroy individual initiative and private effort in the welfare field.
3. The amounts being contributed currently by employers and employees are far short of what will be necessary ultimately to provide promised benefits.
4. This will place unbearable tax burdens on our children and the citizens of the future.
5. Self-employed persons contribute twice as much as employed workers.
6. Eight out of ten physicians are in active practice after age sixty-five. They do not receive benefits.
7. It is unfair to tax physicians for old age and survivors' benefits that they may never receive.
8. Old age and survivors' insurance is not insurance, since (a) there is a decreasing relation between the amount of taxes and benefits, (b) there is no contract between insurer and insured, (c) there is no loan or surrender value, (d) when eligible persons aged sixty-five to seventy-two earn more than $1200 per year, their benefits are reduced to nothing, but their taxes continue.

Arguments for the Defense

1. If the concept is acceptable, the label "Marxist dogma" is irrelevant.
2. Individual initiative might be stimulated, if future hazards were lessened. Private effort in the welfare field might well become less necessary if the aged were protected against penury.
3. Wages and salaries currently amount to nearly 200 billion dollars annually. Four per cent of this sum (the current OASI tax) can provide eight billion dollars each year. At present 7.7 million beneficiaries (out of 12 million persons over age 65) receive only 5.7 billion dollars each year. Ultimate benefits will be higher, but so will taxes, reaching eight per cent by 1975.
4. Eight per cent of payroll is not an unbearable burden.
5. Not twice as much; half again as much.
6. They do not need them.
7. No more unfair than to tax childless married couples for the support of public schools.
8. If it makes anyone happier, let us not call it insurance. Call it old age and survivors' benefits or assistance or annuity payments.

(Continued on Page 93)

CURRENT THERAPY

Infections of the Urinary Tract

By Jack A. Bernard, M.D., El Paso

Infections of the urinary tract are frequently encountered in our everyday practices and the routine therapy would seem simple. However, the development of chronic infections or drug resistant organisms and the possibility of drug toxicity may create quite a problem.

In the cases of acute infection, the infection usually responds well to penicillin or one of the other agents which will be outlined below. In the chronic infections, obstructive uropathy must be eliminated and more extensive bacteriological studies must be carried out.

Simple Gram Stain

A simple Gram stain will differentiate the Gram positive organism from the Gram negative organism. The commonly offending Gram negative organisms include Escherichia coli, Aerobacter aerogenes, Pseudomonas aeruginosa, Proteus vulgaris, and the paracolon bacilli. The Gram positive organisms include Staphylococcus aureus and albus and Streptococcus fecalis.

Penicillin is the drug of choice in the staphylococcal and streptococcal infections. It may give some bacterial suppression of the gram negative organisms also.

Insensitive Staphylococci

The staphylococci encountered are becoming more and more insensitive to penicillin. Erythromycin is reserved for these penicillin resistant staphylococcal infections.

For the gram negative bacilli and for the penicillin resistant organisms one of the sulfonamides is indicated. Gantrisin (or Elkosin) or Thiosulfil are most useful. Gantrisin is highly soluble and therefore there is little danger of crystalluria. Recommended dosage is six to eight grams daily.

Gantrisin Now Used

The usage of sulfadiazine has largely been replaced by Gantrisin. If used, fluids should be forced and the urine observed for crystalluria. The triple sulfonamides would be safer in that their solubility is greater whereas their therapeutic effect is the same as a single sulfa. Actually the above have largely been replaced by Gantrisin or one of the other highly soluble sulfas.

Streptomycin and Dihydrostreptomycin should be reserved primarily for tuberculous infections and for those organisms specifically sensitive to these two drugs as bacterial resistance, and actually dependence, occur readily. Dihydrostreptomycin is less toxic than streptomycin to the vestibular apparatus but is more apt to cause deafness.

Tetracycline Compounds

The tetracycline compounds are active against a wide variety of microorganisms, including E. coli. They are more likely to produce toxic reactions than are the sulfonamides and also more likely to lead to the development of drug resistant organisms. The common usage of these antibiotics for minor infections is therefore not recommended.

Chloromycetin, because of its serious toxic reactions, should be reserved for those severe infections in which other drugs have been ineffective and where the organism is resistant to the other agents but sensitive to chloromycetin.

Polymyxin B Also Used

For Pseudomonas aeruginosa infections, a combination of terramycin and streptomycin is recommended. Polymyxin B has also been used in this infection and other overwhelming infections where all other antibiotics have failed. It is a severely nephrotoxic and neurotoxic drug. Dosage is 2.5 mg. per kilogram of body weight a day intramuscularly for no more than seven days. Neomycin orally 250 mg. every six hours for an equal period of time has also been used. Its toxicity is similar to Polymyxin.

The nitrofuran, Furadantin, is effective against many Gram negative and Gram positive bacteria common to urinary tract infections, especially Proteus. It is also effective against certain protozoa. It has a low toxicity. A few patients develop nausea or vomiting. It is advantageous in that it can be given over long periods of time. Dosage is five to seven mg. per kilogram. Side effects may be reduced by avoiding higher dosage.

Summary

In summary, the various antibiotics and chemotherapeutic agents have been listed for the common urinary tract infections. For the acute infection, the routine sulfonamide, such as Gantrisin, is usually sufficient. Adequate dosage for sufficient length of time should be emphasized: six to eight gm. daily for five to seven days. For recurrent and chronic infections, a longer period of treatment with gradual reduction in dosage is indicated. Careful cultures and sensitivity tests should be done, although in vitro tests are not always indicative of the in vivo response. Finally, the possibility of obstructive uropathy, renal calculi, tuberculosis, malignant disease must be always kept in mind and their presence eliminated.

Acknowledgement is made to Dr. J. D. Bozzell for his helpful criticisms and suggestions.

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

FREDERICK P. BORNSTEIN, M. D., EDITOR — CASE NO. A-534
PRESENTATION OF CASE BY DR. CHARLES P. C. LOGSDON

History — Dr. Nathan Kleban:

A 55 year old unmarried Latin-American woman who had worked as a housemaid entered El Paso General Hospital for the first time on September 20, 1955, because of difficult breathing for one month.

Three months before admission swelling of the lower extremities appeared. One month before admission the patient began to be distressed on exertion by shortness of breath, which progressed to dysphea at rest. At about the same time she consulted a doctor because of a constricting pain in both lumbar areas, which was recurrent and more bothersome while at work than rest. The patient lost her appetite, experienced nausea, and began to vomit.

In Good Health

Except for chicken pox and measles in childhood, and hysterectomy for a "tumor" at age 40, the patient had been in good health until onset of present illness. For about one year there had been urinary frequency but with small volume. For the last month she had urinated only two to three times a day. Chest pain, hemoptysis, other bleeding or easy bruising, orthopnea, and weight loss were denied. There was no previously known tuberculosis, pleurisy, pneumonia, or heart disease.

Carcinoma of the cervix had been responsible for the patient's mother's death at age 50.

Physical Examination:

Temperature 98.8, pulse 88, respirations 36, blood pressure 100 systolic, 50 diastolic. The patient was suffering severe respiratory embarrassment, was perspiring profusely, appeared chronically ill and in poor state of nutrition. Circumoral pallor was noted. Percussion note was dull at both lung bases. A few moist rales were heard over the right lower lung field. Heart sounds were distant. Rhythm was regular.

Abdomen Protuberant

The examiner was uncertain about a murmur, did not specify location. The abdomen was protuberant. The right side of the abdomen appeared more distended and was tympanitic compared with resonance to dullness on the left. Liver and spleen were not palpated, were thought not enlarged. There was slight CVA tenderness. Edema of feet and ankles was observed.

Hospital Course:

Despite denial of othopnea the patient preferred the upright to recumbent position. Intra-venous aminophylline and oxygen by nasal catheter were administered. On the day following admission a thoracentesis was performed with removal of 1450 cc. of fluid from the left pleural space and 150 cc. from the right.

The fluid from the left was first serous, then slightly bloody. That from the right was serous. Respiratory distress was diminished. On the following day two liters of air and 300 cc. of fluid were removed from the left pleural space.

Dyspneic and Orthopneic

A consultant noted that the patient was dyspneic and orthopneic. Blood pressure 96/70, heart rate 100. Heart sounds were of "poor quality and intensity." Murmurs, rub or gallop were not noted. Neck veins were flat with patient in upright position. Fluid and air were thought to be present in the left chest, fluid at the right base. Neither liver nor abdominal masses were palpated. There was 4 plus edema of the back, abdominal wall and thighs; 2 plus of the legs with brawny skin.

Indwelling Catheter

An indwelling catheter was inserted. The patient was given a salt free low protein, high carbohydrate, moderate fat diet which she took fairly well for a day or two. Thiomeric 2.0 cc. was given the second day.

On the third day the blood pressure dropped to 70/60 and i-v levophed was started. One and two tenths milligrams of digitalis were given in divided doses over 24 hours. Diet was changed to liquid. Thiamine 25 mg. was given i-v on the fourth day and 100 mg. I. M. daily thereafter. Brewers yeast, 30 gms. tid. was prescribed.

Thiomeric

Thiomeric 2.0 cc. was given on the sixth and eighth days. Daily urine output never exceeded 850 cc. Levophed was stopped on the sixth day and blood pressure remained 90-80/50.

A record of "slight dyspnea" was made on the seventh day. Stools became soft, then liquid, then changed from brown to yellow in color. Gross hematuria occurred on the ninth day after she complained of severe back pain. There was fever at no time. Pulse was 100 through most of her hospital stay.

Patient Restless

The patient was generally restless, uncomfortable, and ate poorly. On the 10th hospital day, an hour

and a half before death, blood pressure was 90/44, temperature 97.2, pulse 84, respirations 24.

She was unable to sleep, complained of a headache. The nurse heard a deep sigh and a brief stertorous breathing, observed a convulsive movement and a final gasp; then respiration ceased. Pulse and blood pressure were not obtained.

X-RAY REPORTS:

September 20, 1955: Chest film: Bilateral pleural effusions secondary to congestive failure.

September 21, 1955: Flat plate of abdomen: Abdomen negative for evidence of mechanical obstruction. Possible enlarged liver.
Chest film: Bilateral hydro-pneumothorax following removal of pleural effusions.

September 23, 1955: Chest film, portable: Increasing bilateral pleural effusion, most probably on the basis of congestive failure.

September 24, 1955: Chest film, portable: Decreasing pleural effusion.

September 25, 1955: Chest film, portable: Pneumothorax on the left. Expanded right lung.

September 26, 1955: Chest film, portable: Hydro-pneumothorax.

ELECTROCARDIOGRAMS:

September 20, 1955: Sinus tachycardia, low voltage, complete left bundle branch block.

September 21, 1955: Sinus tachycardia, low voltage, ST segment depression, LBBB no longer present. Coronary occlusion with septal involvement?

September 23, 1955: Bundle branch block, unclassified, probably left.

September 24, 1955: Bundle branch block, unclassified, probably left. ST-T wave changes secondary to wide QRS and also due to digitalis.

September 26, 1955: No significant change.

September 27, 1955: Low voltage in limb leads and of the R wave in V4-6, ST elevated with positive T AVR.

September 28, 1955: No significant change except for difference in V leads probably due to electrode placement.

LABORATORY:

September 20, 1955: Urinalysis: Straw, clear, acid, 1.014, albumin trace, sugar negative, WBC 8-10/HPF. RBC occasional, numerous hyaline and waxy casts.
Hb, 13.8 gms., RBC 4.21; WBC 11,570; stabs 2, segs 86, lymphs 8, monos 3, eos 1.
Kline exclusion, negative.
Blood urea nitrogen 46.7 mg. per cent.

September 21, 1955: Blood urea nitrogen 50.6 mg. per cent; CO_2 combining power 20 meq/l; chloride 350 mg. per cent; serum albumin 3.17, globulin 2.42
Hematocrit 47; ESR 26 mm/hr.

September 22, 1955: Pleural fluid: WBC 300, polys 192, lymphs 108; RBC 2628, 2358 crenated; sugar 123 mg. per cent; protein 750 mg. per cent; no growth in 48 hours; no AFB, no fungi on smear; cell block for tumor cells.

September 23, 1955: Sodium 120 meq/l; Potassium 3.6 meq/l.

September 24, 1955: Hematocrit 47 per cent; ESR 40 mm/hr.

September 25, 1955: Urinalysis: straw, cloudy, acid, 1.010, albumin trace, sugar negative, WBC innumerable, RBC 8-10/HPF.
Antistreptolysin 0 titer; 12 units.

September 27, 1955: L.E. test: No L.E. cells found. Blood culture: no growth in two weeks

September 28, 1955: Hematocrit 42 per cent; ESR 27 mm/hr.
Urinalysis: Red, gross blood, cloudy, acid, 1.012, 2 plus albumin, sugar negative.
Thorne test: Total eosinophils before ACTH: 720/cu. m.m.; after ACTH: 288/cu. m.m.
Hb. 12.0 gms; RBC 4.36; WBC 24,100; stabs 2, segs 86, lymphs 8, monos 2, eos 1, baso 1; slight hypochromia.

DIFFERENTIAL DIAGNOSIS:

Dr. Charles P. C. Logsdon

The essential points in the history are edema, of three months' duration; constricting pain in the lumbar region which came on one month before admission and later anorexia, nausea and vomiting.

According to the history, the patient first had edema and then two months later had dyspnea. This would suggest, of course, that the heart was not the cause of the edema.

When the patient came in, she had anasarca apparently without a cyanosis. She had a normal temperature, and a rather low, but not abnormally low blood pressure.

Blood Chemistry Normal

Her blood chemistry was essentially normal. There were some interesting abnormal EKG's which were not stable, and these X-rays which demonstrate a bilateral pleural effusion. Perhaps the most interesting occurrence before the patient died was gross hematuria on the ninth day.

It is rather interesting that this patient should not have had anemia and that the sedimentation rate was apparently not too abnormal. On one occasion, I think, it was recorded at 40 and on two occasions at 27. The serum proteins were normal.

Other Tests

The urine, while not normal, was certainly not abnormal enough to suggest any process which might have been causing what the patient was ill of and what she died of. Then there were certain other tests which were normal, such as the Thorne test, which was quite a normal response — the most perfectly normal response I think I have seen in El Paso — and the blood chemistry, which, while it was not normal, was not such, as far as I could see, as to be diagnostic of anything.

Electrocardiograms Abnormal

With the electrocardiograms so distinctly abnormal, there would be a tendency to try to connect the heart with whatever the patient had. Actually, I think the question of whether or not the patient had congestive failure and whether or not congestive failure was responsible for the anasarca, should be disposed of, if possible. It certainly appears from the protocol that she did not have congestive failure.

Fair Picture

I don't believe we have a good X-ray picture of the heart, but here's a fair one. The heart is not abnormal in size. With the normal heart size and such anasarca as we see here, I think that the only kind of heart disease producing such a syndrome would be a constrictive pericarditis, in which case there should be a phenomenally high venous pressure, which this patient did not have.

Liver Never Palpated

Furthermore, I believe the liver was never palpated and I think there was a note made that perhaps it could have been palpated had it been enlarged. In general, the patient did not look like suffering from congestive failure. There was no gallop rhythm, there was no extreme tachycardia. I think the heart rate ran around 100. There were no murmurs. There was just nothing to suggest heart disease except an abnormal EKG — which was very definitely abnormal.

The electrocardiograms — there were quite a few of them taken — showed either left bundle branch block or a pattern in which the bundle branch block tended to disappear — at least the most characteristic morphologic features of that bundle branch block disappeared. Certain others remained. Conduction time was normal in the QRS complex but the ST-T changes of that left bundle branch block remained, suggesting that it was a variation within a block.

Heart Disease Indicated

A left bundle branch block is, in the great majority of cases, over 99 per cent of cases, a finding indicating heart disease, and an intermittent left bundle branch block — that is, when it appears and disappears — is not unknown. It's seen in old arteriosclerotics and those are the only cases I know in the literature in which left bundle branch block has been intermittent. But it seems to me that this patient never quite got out of that bundle branch block. She has very low voltage in her EKG which could be accounted for on the basis of the anasarca.

Age Is 55

Now, the patient's age is 55, which could account for a left bundle branch block, but it would be hard to imagine her having that much pathology — that is, sufficient to produce a left bundle branch block without having apparent heart disease, especially in a heart that was under as much strain as it was in this case.

But, at any rate, I think there is insufficient evidence to consider the heart as an important etiological factor in this patient's illness, and I would have to assume that it was an incidental disease — whatever was wrong with her heart — and it would, in the great majority of cases, be coronary sclerosis or some left sided lesion which was not present here apparently.

Left Side Lesion

The left sided lesion, that is. It would be nice to tie everything together in one of the collagen diseases. The electrocardiographic lesion, the anasarca, the — well, that's about all, because you can't put your finger on a great deal more that this patient had.

But with the sedimentation rate that was on two occasions around 27, with no anemia, no significant change in the white count that I recall — there was a moderate lymphocytosis — it would be hard to build up much of a case for a very malignant collagen disease that would kill this patient in three months' time.

Unexplained

Another thing that is quite unexplained is the constricting lumbar pain which the patient had at the time — or about the same time — as the dyspnea appeared. I don't know what that could have been. Now, it might be well at this time to point out that liver function was not apparently impaired although we don't, I believe, have full studies on that. But at least there was no hypoproteinemia to account for the edema.

Kidney Findings

The kidney findings were not remarkable except for a BUN of 50. I don't know at what point an elevated BUN is compatible with the edema in a given case, or with the heart failure in a given case, and at what point it has to be a combination of things, but I think, perhaps, a BUN of 50 might well be compatible with extra renal disease in this patient.

Little Left

So, ruling out serious renal disease, if you can, and I think you can, there is no liver disease, no hypoproteinemia, no congestive heart failure, none of the collagen diseases, so it leaves you very litle. In fact, it leaves you practically nothing.

A day or two before she died, she had gross hematuria, which would indicate that she did have something happen in her urinary tract.

Final Remark

Anyway, a final remark of mine on the case. I would say that there is insufficient evidence for congestive failure in this case. I don't think it existed. Whatever heart disease there was, was probably incidental. I don't think collagen disease would be likely — I mean, with a patient dying as rapidly as this with no anemia, with not a marked elevation of the sed. rate, with none of the other things that you find in a collagen disease.

Malignancy Indicated

Therefore, I think a malignancy of some sort — I'd hate to say what sort — to the pleurae is probably the most likely diagnosis. And of course the malignancy must have been somewhere around the kidneys. A peritoneal malignancy might in some way have accounted for the constrictive pains the patient has and might later have involved the kidneys and then given us the hematuria.

Dr. Jack C. Postlewaite:

Well, the patient had three months to get into this shape and she died an acute death. She had a pulmonary embolism. She had multiple pulmonary infarctions which gave some bloody fluid. The one trick in the case that puzzles me is why this blood in the tap of the ascitic fluid. Now, it's true the admission urine is not normal.

Cellular Findings

She had cellular findings in this urine, which make one wonder if something obscure in the kidneys was going on other than a malignancy and one wonders if this patient did not have typical fluid problems of alteration of the electrophoretic pattern not necessarily shown in the AG ratio.

In Acidosis

Also in the cations the sodium and potassium probably have been altered. Notice, she's in acidosis. And all this possibly was brought on during treatment here. However, we don't have the admission chemistries and we notice that terminally her white cell count was up to 24,000.

Talk on Resins

I had an opportunity to hear a talk on cation and anion resins. The point I'm getting at is that these stresses that occur can alter the body physiology to the point of being incompatible with life. And so, at post mortem, we find that many times we don't have a cause of death.

Glomerulonephritis

I think she had a pulmonary embolism that stopped her. And I think she had a glomerulonephritis which presumably was set off by some streptococcal infection which antedated the problem, and nobody remembered that she had a pathological physiological change of her fluid balance. She went into failure with fluid in all spaces as well as a true anasarca. Finally, her pulmonary embolism cut her down.

Dr. Celso C. Stapp:

I notice on the protocol they mention nothing about a vaginal examination being done on this woman, and I don't think that we can leave it out in our consideration of what's wrong. I'm not saying that it contributes greatly, but it should be included in differential diagnosis of anyone with a pleural effusion.

That's your possibility of a Meigs' syndrome. It can be rather extreme and in a person who is already debilitated with the kidney damage that this woman has — or had, I should say — and her other difficulties I think it should be added to the differential diagnosis.

Dr. H. M. Gibson:

I'd like to start out backwards about the kidney disease. The patient was noted to have pain in the back region, and gross hematuria. Those symptoms are absolutely classical for infarction. As far as the question of additional kidney pathology on admission, both kidney shadows can be visualized in this film.

Appear Normal

They appear to be normal in size, location and position. I cannot tell about retroperitoneal disease except the kidneys do not appear to be displaced, which would be against retroperitoneal disease. As far as nephritis is concerned, acute glomerulenephritis usually, I believe, raises the blood pressure and certainly raises the sedimentation rate tremendously.

Further Comment

Further, if the blood count or the hematocrit is accurate I have never see chronic renal disease produce acidosis and this degree of elevation of the urea nitrogen and still have a normal blood count. I do not see any definite evidence of a chronic renal disease in this particular case. I do think that the patient had a terminal renal infarction.

Dr. Joe C. Carter:

I would like to make a different diagnosis, getting back to the help of just one finding. There is no question but what pleural effusion occurs in about 10 per cent of congestive failure. The rest of them are infections or malignancies. In this case, the pleural fluid contained less than one per cent of protein. 76 per cent of the cases of exudate contain three or more per cent. Or at least 2½ per cent.

Transudate

On that basis, I would say that this patient had a transudate. It was not inflammatory. It was not a neoplasm. And, incidentally, an infarction also gives you an exudate rather than a transudate. But not having see the EKG's and considering the fact that the left bundle branch block obscures a great many findings in the heart, I would say that this patient had had two infarctions — one before she came in, and one after she came in.

Mural Thrombi

Of course, an interstitial myocarditis or an idiopathic affection of the heart can also give you mural thrombi and maybe produce this clinical picture and also in a reasonable length of time, like two or three months.

CLINICAL DIAGNOSIS:

Congestive failure, etiology undetermined.

Dr. Logsdon's Diagnosis:

Carcinomatosis of pleurae with primary lesion in abdomen.

ANATOMICAL DIAGNOSIS

1. Adenocarcinoma of the liver with compression of the inferior vena cava.

2. Pleural and pericardial carcinomatosis.

3. Ascites.

PATHOLOGICAL DISCUSSION

Dr. Bornstein:

I feel one of the main purposes of a Clinical Pathological Conference is to help to break up the habit of thinking in conditioned reflexes, such as: edema and dyspnea equal heart failure.

I think Dr. Logsdon has succeeded very brilliantly in showing that these two conditions are not linked inseparably.

Slender Woman

On autopsy, we found a rather slender woman. After opening the chest, there were about 1500 cc. of cloudy fluid in each pleural cavity. Both the pleurae and the pericardium were studded with numerous extremely firm greyish white nodules which measured up to one cm. in greatest diameter. The visceral pericardium was not involved.

Situation Revealed

The search for the primary tumor revealed a situation which is only understandable if you visualize the peculiar anatomical relationships between the inferior vena cava and the liver. The tumor was located in the part of the liver directly adjacent to the vena cava. It was an extremely firm greyish white nodule which measured about four cm. in diameter and had grown directly into the wall of the vena cava.

Considerable Compression

The tumor had produced a considerable compression of the lumen of this vein. Histologically, the tumor was composed of structures resembling biliary canaliculi and therefore should be classified as an adenocarcinoma of the liver arising from small bile ducts.

Also present was a small amount of ascites. The kidneys were grossly and microscopically normal.

Peculiar Location

The peculiar location of the tumor explains the clinical picture fairly well. Compression of the vena cava has often been responsible for peripheral edema.

The pleural effusion was obviously due to the carcinomatosis. Dr. Logsdon, in his differential diagnosis, suggested the possibility of the pressure of a constrictive pericarditis and I am quite sure that the carcinomatosis of the pericardium should have about the same effect.

I was unable to discover a structural change responsible for the heart block. We did not take a sufficient number of sections through this important area to confirm or deny the presence of a small metastasis in this region which would have offered a nice explanation for the heart block.

Summary

In summary, then, we have a woman who died rather rapidly, with edema in all places being a most prominent symptom. The mechanism for this edema in this particular case is double in character, being caused by: (1) a direct compression of the inferior vena cava due to tumor, and (2) a carcinomatosis of the pleural and pericardial cavities.

Social Security

(Continued from Page 87)

9. Even if the concept of Social Security is acceptable to you, *compulsory* inclusion of physicians is repellent, and is the first step toward complete governmental control. We should insist on the right of the individual to decide whether or not he shall be included under OASI.

9. A social program that depends on the contributions of participants for its financial support must include every member of each covered group. Voluntary participation on an individual basis would lead to chaos. If only those who wished to benefit by the plan were permitted to join, and those who do not need it refused to contribute, the program would become a government dole, and would have to be supported out of general funds.

It becomes obvious that this is a controversial issue. The issue most certainly in all probability must be met and acted upon. It quite definitely is a problem which requires consideration and thought because its acceptance might well lead to repercussions. Each individual physician must study the concept that this issue represents and decide whether or not the label "Marxist dogma" is relevant or irrelevant.

APHORISMS and MEMORABILIA

Truths and Concepts Concerning the Genito-urinary System

By Andrew M. Babey, M.D., Las Cruces, N. M.

1. "Pyelonephritis is the most common renal lesion found at autopsy, and occurred in 15 to 20 per cent of autopsies performed at large general hospitals. In about one-third of the cases of pyelonephritis found at autopsy the lesion was of major importance as a cause of death and this relationship has not diminished significantly since the advent of antibiotics." Edw. H. Kass; *The Amer. Journ. of Med.;* May, 1955; P. 764.

2. "Chronic pyelonephritis is a more frequent cause of Bright's disease than is chronic glomerulonephritis and is the most common renal lesion in uremia. Acute exacerbation of pyelonephritis is considered to be the common precipitating factor in uremia." E. Kass; *loc. cit.;* P. 764.

3. "Pyelonephritis occurs about four times as often in diabetics who have come to autopsy as in non-diabetics." E. Kass; *loc. cit.;* P. 764.

4. "Pyelonephritis is also one of the most common complications of pregnancy and occurs in about one-fifth of the cases of toxemia of pregnancy." E. Kass; *loc. cit.;* P. 764.

Symptoms

5. "Symptoms referable to the lower urinary tract, such as dysuria, frequency and urgency, are more common in pyelonephritis than are flank pain, fever, chills and other generalized evidence of sepsis." E. Kass; *loc. cit.;* P. 764.

6. "Chronic pyelonephritis may be present, and may heal, without giving rise to symptoms or signs, or even obvious pyuria." E. Kass; *loc. cit.;* P. 765.

7. "Absence of bacilluria when symptoms and signs suggest renal infection, should suggest the possibility of ureteral obstruction." E. Kass; *loc. cit.;* P. 765.

8. "For practical clinical purposes the Gram stain of the freshly collected and unsedimented urine will differentiate contamination from infection, since organisms are readily found in stained specimens of urine when about 10 bacteria or more per ml. are present." E. Kass; *loc. cit.;* P. 766.

9. "Because the emergence of resistance may be so complete and because streptomycin, when it is effective, usually kills bacteria so rapidly, treatment with this drug ought not to be prolonged more than four to five days except under unusual circumstances." E. Kass; *loc. cit.;* P. 772.

Brief Review

10. "A brief review of older methods of treatment of urinary infections shows that ketone bodies, mandelic acid and methenamine mandelate, when used properly, are highly effective in the treatment of most acute uncomplicated infections of the urinary tract but relatively ineffective in the treatment of chronic and complicated infections." E. Kass; *loc. cit.;* P. 778.

11. "Under proper conditions correlation is better than 90 per cent between antibiotic sensitivity and elimination of bacteria from the urine. However, in chronic, complicated infections, reinfection and relapse rates are so high that ultimate bacteriologic control probably does not exceed 10 per cent." E. Kass; *loc. cit.;* P. 779.

12. "Prophylactic use of drugs in patients with inlying catheters is probably valueless and serves merely to convert the bacteriologic flora from susceptible to resistant to the prophylactic agent." E. Kass; *loc. cit.;* P. 779.

13. "Joekes, Lowe, and I prescribed a high-carbohydrate high-fat diet for anuria, but I am certain that a high-carbohydrate diet is sufficient. I have progressively reduced the fat-content of the diet, and sometimes leave it out altogether, because diarrhea develops in some patients fed on some batches of peanut oil." G. M. Bull; *The Lancet;* April 16, 1955; P. 779.

Satisfactory Method

14. "In severely azotaemic patients (blood-urea level above 100 mg. per 100 ml.) with chronic renal lesions, a satisfactory method of deciding on the optimal 'rate of' urine flow is to give a basic 800 ml. of water, plus a volume of fluid equal to the previous day's volume of urine, plus about 200 ml. The urine flow will increase, and the procedure can be repeated until the urine flow is steady, or an inconveniently large intake of fluid is reached. It is particularly important in these chronically azotaemic patients that the fluid intake should not fall. A great many patients of this sort must have died as a result of ill-advised restriction of fluids, for a concentration test or for pyelography. The main value of the former test is in the less severe renal lesions, and I believe it should not be used in patients with a blood-urea level above 100 mg. per 100 ml." G. M. Bull; *loc. cit.,* P. 779.

15. "The most convenient method of dealing with hyperpotassaemia is to administer large quantities of glucose, which moves into the cells, taking with it potassium to form a glycogen-potassium complex." G. M. Bull; *loc. cit.,* P. 780.

16. "Wherever possible it is safest to administer potassium by mouth, even in depleted patients. Up to 10 g. per day of KCl may be given. Where it is necessary to administer it intravenously it may be given in concentrations of up to 2 g. per litre of infusion fluid, at a rate of not more than 1 g. per hour." G. M. Bull; *loc. cit.,* P. 780.

Water and Electrolytes

17. "Contrary to earlier beliefs, the most important substances in the genesis of the uraemias are not the organic end-products of nitrogen metabolism but water and electrolytes." G. M. Bull; "The Uraemias," *The Lancet;* April 9, 1955; P. 731.

18. "It is unfortunate that in most patients there are no presenting symptoms and signs of hyperpotassaemia. The patient dies suddenly of cardiac arrest. Very rarely indeed, hyperpotassaemia may be accompanied by a flaccid hyporeflexic generalized paralysis, clinically indistinguishable from that which may occur with hypopotassaemia." G. M. Bull; *loc. cit.;* P. 731-732.

19. "Hypercalcaemia is very uncommon in renal failure, and where it occurs it is usually the cause rather than the result of the failure, as in vitamin-D intoxication, sarcoidosis, hyperparathyroidism, and myelomatosis." G. M. Bull; *loc. cit.;* P. 732.

20. "Infections are important in two ways; they may prove fatal because of the toxemia; but also they may increase metabolism and so flood the system with end-products of tissue breakdown, disturbing an already precarious state of water and electrolyte balance. Release of potassium from cells as a result of this katabolism is of special importance in the anurias. Thus in the management of renal failure the prevention and treatment of infection and its consequences require careful attention." G. M. Bull; *loc. cit.;* P. 736.

Death Likely

21. "The only chemical abnormality that is likely to cause death in the first week of uremia is potassium intoxication." W. H. Meroney & R. F. Herndon; "Management of Acute Renal Insufficiency"; *Journal of Amer. Med. Ass.;* July 3, 1954; P. 878.

22. "A deficit of plasma calcium is of cardinal importance during oliguria, because calcium is a specific antagonist of potassium and hyperpotassemia and hypocalcemia occur at the same time. As the plasma potassium level rises, the degree of toxicity recorded by the electrocardiogram is consistent with it only if the plasma calcium level is maintained; otherwise, the electrocardiographic abnormality and the threat to the patient's life are greatly increased." W. H. Meroney & R. F. Herndon; *loc. cit.,* P. 878.

23. "Replacement of the calcium deficit produces a striking improvement in the electrocardiogram, which then is reverted to that degree of abnormality characteristic of the plasma potassium level. The improvement following a single intravenous injection of calcium, however, is very transient." W. H. Meroney & R. F. Herndon; *loc. cit.,* P. 878.

24. "Sodium and potassium are inversely related in the plasma of the oliguric patient; raising the plasma sodium concentration causes a fall in plasma potassium concentration and modifies the electrocardiographic effects of potassium intoxication." W. H. Meroney & R. F. Herndon; *loc. cit.,* P. 880.

Sodium Effects

25. "Sodium, in addition to depressing the plasma concentration of potassium, may also have some antagonistic effect similar to that of calcium." Meroney and Herndon; *loc. cit.,* P. 880.

26. "Infusions of hypertonic solutions of sodium salts provide an effective and practical means for modifying potassium intoxication." Meroney and Herndon; *loc. cit.,* P. 880.

27. "While calcium antagonizes the effects of potassium without changing the quantity present in the plasma and sodium forces potassium into cells by some physicochemical means, glucose carries potassium into cells by a more active process. As glycogen is formed, potassium, as well as phosphate, is incorporated into the carbohydrate complex; this is an effective, though slow, method of controlling potassium intoxication." Meroney and Herndon; *loc. cit.,* P. 880.

28. "If dextrose is to be used effectively by the intravenous route, it should be given continuously. Intermittent intravenous injection of dextrose causes a sharp spike in blood sugar level followed by hypoglycemia. The hypoglycemic period has the double disadvantage of failure to remove potassium during that period and provocation of glycolysis with further release of potassium to the plasma. Also, if nutrition is limited to intermittent intravenous feedings of dextrose, the period between infusions is one of relative starvation, which is characterized by cell destruction and release of potassium." Meroney and Herndon; *loc. cit.,* P. 881.

Southwest Ob-Gyn Meeting Set For Tucson Nov. 12 and 13

Annual meeting of the Southwest Obstetrical and Gynecological Society will be held in Tucson November 12 and 13, 1956, Dr. Hollis H. Brainard of Tucson, President of the Society, has announced.

Members of the Society are from Southern California, Nevada, Arizona, New Mexico, and El Paso County in West Texas.

ORIGINAL ARTICLES

The Use of 'Ilotycin' (Erythromycin) in Various Dermatoses

By Sidney N. Gellis, M.D., and Kenneth C. Baker, M.D.,* Tucson

'Ilotycin' (Erythromycin)** has been identified as a strain of Streptomyces erythreus and is useful in infections caused by gram-positive bacteria which are sensitive to its action. It is particularly useful in persons who are hypersensitive to penicillin or other antibiotics. We attempted this study to determine the incidence of side-reactions such as nausea, vomiting, diarrhoea and to determine whether monilial eruptions developed during the period of treatment. Our series included 32 patients and consisted of 28 hospitalized patients and four out-patients. We were able to observe our patients carefully and at frequent intervals during this study and photographs were taken to illustrate the progress of the various dermatoses treated.

Plan of Treatment

We planned to use the medication both orally and locally in some patients as indicated, while in others either oral administration or local application was resorted to. Our aim was to discontinue the medication as soon as possible after it had served its purpose. In some cases we felt that the medication was not effective after a sufficient trial period and it was then discontinued. In those cases where sufficient improvement was noted within a few days to a week, we reduced the dosage accordingly.

Preparations Used

Tablets 'Ilotycin' (Erythromycin) crystalline 200 mg., were used in our study. The average starting dose was 800 mg., daily, divided into four equal doses. In most of our cases the original dosage of 800 mg., daily was reduced to 600 mg., daily by the end of the first week and then further reductions in dosage, gradually to 200 mg., daily were carried out.

For local application, 'Ilotycin' (Erythromycin) ointment, crystalline, 10 mg., per gm., was employed. The patients were instructed to apply the ointment to the affected areas twice daily.

Cases Treated

Of the 32 patients treated in this series, 22 received the drug both by mouth and by local application. Eight patients were treated by local application alone and two patients received the drug by mouth. Twenty-eight patients were hospitalized while four were treated as out-patients. All of the patients were seen at least once a week by us. All of our patients treated were adult males. Nine patients were treated for pyoderma; eight were treated for eczema, infected; six for folliculitis; three for epidermophytosis, infected; two for cellulitis; three for psoriasis and one for acne conglobata.

Results of Treatment

Table I illustrates the various dermatoses treated with the method of administration of the drug. The results of treatment were classified as excellent when striking improvement was noted within a few days to a week; good results indicate progressive improvement which occurred within a week to two weeks. In both these catagories relapses were not noted. Partial improvement indicates improvement while the patient was undergoing treatment with the drug but relapses occurred when the medication was discontinued. In these cases re-treatment was carried out with signs of improvement and it was often necessary to administer a maintenance dose of 200 mg., daily for various periods of time to such patients. When further improvement failed to occur, the drug was discontinued, usually after a month's trial. No improvement refers to cases which were not benefited after a month's trial on the drug.

Definite Value

This antibiotic was of definite value in those dermatoses in which pyogenic organisms were the causative agent such as cellulitis and pyoderma. It definitely controlled secondary pyogenic infection in cases of infected eczema, epidermophytosis and folliculitis. However, we noted that in these cases associated with secondary pyogenic infection, the underlying dermatosis itself was not benefited by the antibiotic after the secondary pyogenic infection was eliminated. We failed to notice any improvement in our psoriasis patients.

Side-Effects During Oral Administration

None of our patients complained of gastro-intestinal symptoms such as nausea, vomiting or diarrhoea. One patient who was previously treated with a broad-spectrum antibiotic, which caused gastro-intestinal upsets, tolerated 'Ilotycin' well after the broad-spectrum antibiotic was discontinued and 'Ilotycin' substituted for it. No harmful effect from the drug was noted on the blood picture or kidneys. We did not notice any development of monilia infections in any of our patients. The use of 'Ilotycin' is not likely to cause a drastic change in the intestinal flora and

From the Veterans Administration Hospital, Tucson, Arizona.

* Dr. Kenneth C. Baker is Consultant Dermatologist at the Veterans Administration Hospital, Tucson, Arizona. The material used in this study was supplied by Eli Lilly and Company, Indianapolis, Indiana.

** A product of Eli Lilly and Company.



Figure 1. *Case 1, infected dermatophytosis, with secondary cellulitis, before treatment.*



Figure 2. *Another view of Case 1 before treatment.*

Figure 3. *Case 1 after one week of treatment, consisting of local application of 'Ilotycin'* ointment and systemic administration of 800 mg. of the drug daily.*



Figure 4. *View similar to Figure 2, after one week of treatment.*



*'Ilotycin' (Erythromycin, Lilly)



Figure 5. *Case 1 after two weeks of treatment.*



Figure 6. *View similar to Figure 2, after two weeks of treatment.*

Figure 7. *Case 2, infected eczema, before treatment.*



Figure 8. *Case 2 after one week of treatment, consisting of local application of 'Ilotycin' ointment and systemic administration of 800 mg. of the drug daily.*



it does not seem to produce the enteritis which may be associated with administration of broad-spectrum antibiotics. Neither does it appear to produce an overgrowth of non-susceptible organisms, particularly monilia. We feel that since gastro-intestinal symptoms and development of monilia infections are not likely to occur during 'Ilotycin' therapy, patients can be treated with this drug for a longer period of time, if necessary, and they will be less apt to discontinue therapy when annoying or potentially serious side-effects can be eliminated.

Side-Effects During Local Application

We failed to notice any signs of local irritation to the ointment used. One patient complained of itching but examination failed to reveal signs of contact dermatitis in this patient which could be attributed to the ointment. This patient continued using the ointment but did not complain of any further itching.

Report of Some Cases

Case 1. J. S. W., a 36 year old white male, was admitted to the Veterans Administration Hospital, Tucson, Arizona, on March 3, 1954, for treatment of infected dermatophytosis and cellulitis of the legs.

He also had a dermatophytid and/or bacterid involving the hands and lower abdomen. The duration of the present attack was one week although he stated that he suffered from dermatophytosis with repeated flare-ups for five years on and off. Figures 1 and 2 illustrate his condition on admission.

He was started on 'Ilotycin' tablets 200 mg., four times a day. Ilotycin' ointment was applied locally to the denuded areas. Striking improvement resulted within four days and figures 3 and 4 show his condition one week later.

'Ilotycin' Reduced

The dose of 'Ilotycin' was reduced to 200 mg., twice a day at the end of the first week. Figures 5 and 6 illustrate his condition at the end of two weeks of treatment. A striking feature was the prompt improvement in the "id" lesions on the hands and abdomen. Often these are most resistant to therapy.

'Ilotycin' was discontinued at this time and patient was discharged from the hospital. He was observed in the Out-Patient Department and no flare-ups were noted during a few months follow-up observation period.

Case 2. A. G., a 36 year old white male, was admitted on December 6, 1954, for treatment of infected eczema of two weeks duration. The patient stated that he suffered from eczema for the past eleven years which involved various parts of the body. At the time of admission he presented infected eczematized areas involving the outer aspect of the right ankle and over the right knee.

Cellulitis was present over the right ankle region. Scattered patches of eczema were present over the lower back and groins. Figure 7 illustrates the condition of the right ankle at the time of admission. Treatment consisted of 'Ilotycin' tablets 200 mg., four times a day and the ointment was applied locally twice a day to the infected lesions.

Marked Improvement

Marked improvement was seen by the end of the first week, in that the secondary pyogenic infection was eliminated. However, the underlying eczema involving the other areas on the trunk was not benefited by the drug.

Figure 8 demonstrates the condition one week following the start of treatment. The dose of the drug was reduced to 200 mg., three times a day at the end of the first week.

At the end of the second week the drug was given in a dose of 200 mg., daily and this dose was continued for one week after which time the patient was discharged. A flare-up occurred two weeks after discharge and this was controlled by 200 mg., of the drug daily for one week.

Comment

In reviewing the literature, there exists a difference of opinion as to the increased incidence of monilial eruptions following antibiotic therapy. Waisman[1] believes that a distinct and unequivocal increase in monilial eruptions were seen as a complication of treatment with broad-spectrum antibiotics such as chlortetracycline (Aureomycin), oxytetracycline (Terramycin), tetracycline (Achromycin, Tetracyn) and chloramphenicol (Chloromycetin).

It is believed by Zimmerman,[2] Harris,[3] Woods,[4] Brown et. al,[5] Livingwood and Mullins,[6] that the clinical manifestations of moniliasis which occur complicating antibiotic therapy are due to the destruction of the normal flora of the body, thereby removing the inhibiting effect of these organisms which compete with the co-existing C.albicans for nutritive substances in the same substrate.

No Monilial Eruptions

Since 'Ilotycin' is not likely to bring about a drastic change in the intestinal flora, monilial eruptions are not apt to occur during the administration of this drug. We did not observe any occurrence of monilial infections in our series nor did we notice gastro-intestinal upsets in our patients.

Kligman[7] does not feel that there is convincing evidence to believe that antibiotics really stimulate the growth of fungi.

Robinson[8] also believes that laboratory studies indicate that the antibiotics do not stimulate or retard the growth of C.albicans.

Leitner[9] feels that alteration in vitamin biosynthesis may be a factor in lowering the resistance to the Candida, and he claims success in the prevention and treatment of monilial infections by the administration of vitamin B complex concurrently with the antibiotic drug.

Summary and Conclusions

Thirty-two patients were treated with 'Ilotycin' (Erythromycin) for various dermatoses, 22 patients

(Continued on Page 114)

Cancer of the Breast*

By J. Leighton Green, M. D., F. A. C. S., El Paso

Cancer of the breast is one of the unsolved problems of the medical profession. We must admit that we do not know the cause or the cure of this widely-prevalent disease. Adair has expressed the doubt that the average woman with early cancer of the breast has any better chance of cure today than she had 60 years ago.

Proof that present methods of treatment are unsatisfactory is found in the fact that one group of surgeons advocates much more radical surgery than the accepted methods, while another group advocates more conservative treatment.

Incidence

Breast cancer in American women has the highest incidence of any form of neoplastic disease in either sex. It is estimated that there are at one time over 50,000 cases in the U. S. This disease — or group of diseases — is the most common cause of cancer death in women.

It is the leading cause of death for women between the ages of 40 and 60 years. In 1901 the mortality rate of breast cancer per 100,000 women has 10.9. In 1948, that rate had increased to 26.9. During 1948, 18,938 women died from this disease, highest mortality up to that time.

The peak age incidence is 45 to 49. Breast cancer is a disease of middle age.

Etiology

The etiology of mammary cancer remains unknown. Many factors have been thought to contribute to the onset of the disease. Notable are singleness, infertility, failure to nurse babies, trauma, infection, late menopause, and use of hormones. Careful investigation of series of cases does not bear out such impressions.

Trauma probably serves only to accelerate already-existing disease. Clinical use of estrogens have been condemned because of the alleged carcinogenic tendency of these hormones, but estrogen have never been proved to cause cancer in the human breast.

Chronic Cystic Mastitis

Chronic cystic mastitis, or fibrocystic disease, may provide proliferative lesions which become precancerous, but this is open to dispute.

Warren found 35 cases of carcinoma of the breast in 1044 cases of chronic cystic mastitis and chronic mastitis. He calculated this to be 4.5 times as great an incidence of breast cancer as for women in general.

250 Cases

Lewis and Ceschickter, on the other hand, followed 250 cases of chronic cystic mastitis for five years or more and found the deaths from carcinoma of the breast to be 0.4 per cent. They concluded that chronic cystic mastitis is not a precancerous disease. Adair followed 400 patients with cystic mastitis for some years and operated on only three of them for carcinoma. Something in the mother's milk is said to have a bearing on later development of cancer, perhaps, a virus.

There seems to be a familial tendency to cancer in some families. Examination of such families has found every patient to show hyperestrogenism.

Pathology

A typical cancer begins in the breast gland and spreads laterally to axillary lymphatic nodes. However, Handley studied biopsied nodes of the internal mammary chain and found that 34 per cent of breast lesions had metastasized to the internal mammary nodes.

Of 48 patients with cancer in the inner half of the breast, 60 per cent had metastases in internal mammary nodes. In 81 patients having axillary metastases, 48 per cent had internal mammary deposits. Orrahood showed that in breast cancer the incidence of metastases in internal mammary and supraclavicular nodes may be greater than 60 per cent.

Radical Mastectomy

Obviously, the Halstead radical mastectomy can be successful in only the remaining 40 per cent of cases, or less.

H. T. Randel (of Memorial Hospital, New York) reports four years' experience with internal mammary node dissection. He says that 60 per cent of cancer of the internal half of the breast involves internal mammary nodes. It should not be forgotten, also, that cancer of the breast may metastasize via the blood stream.

Great Responsibility

The pathologist has a great responsibility. Upon the pathologist's report hangs the surgeon's decision for or against a radical operation. The pathologist's examination of excised axillary nodes determines whether post-operative irradiation shall be given.

Ackerman and Regato report instances in which only one node in 25 or 30 was found malignant. It is obviously necessary to examine many nodes to determine whether metastases are present. Statistics on axillary metastases and therefore reports on surgical results hinge on such examinations.

Symptoms and Clinical Course

There are very few early symptoms of carcinoma of the breast. Usually a painless lump is discovered by the patient or by her physician during examination. A sensation of heaviness in the breast may be the patient's complaint.

*Presented Dec. 11, 1955 at University of Texas Postgraduate School of Medicine, El Paso.

There may be some thickening of a portion of the breast. Infrequently, a large mass in the axilla may be the first sign noticed. Backache, due to metastases to vertebrae, is of course a symptom of advanced carcinoma.

Growth Variable

Growth of tumors is variable, some enlarging rapidly, some requiring several years to reach any appreciable size. With increase in size of the tumor, skin involvement occurs, with edema and local pain. Satellite skin nodes may then develop about the tumor.

Enlarging axillary nodes may become fixed and may cause swelling of the arm. Allowed to progress, the tumor may ulcerate and become infected, or erode a blood vessel and bleed copiously.

Advanced Signs

Secondary anemia and weight loss are signs of advanced disease.

What is most important is to eradicate the cancer while it is still a small nodule localized in the breast. Harrington has shown from statistics compiled at the Mayo Clinic that when axillary nodes have been invaded prognosis is far worse than when the axilla is free of the disease.

Diagnosis Difficult

Diagnosis of the early lesion is often quite difficult. A good history is important — family history, history of pregnancy and lactation, nipple discharge, breast injuries, premenstrual breast swelling or pain, when the tumor was discovered, when a physician was first consulted, loss of weight, previous treatments — all are important information.

Diagnosis depends on a high index of suspicion and a careful examination. There must be a strict, painstaking routine in which all four quadrants and the subareolar area of each breast are meticulously surveyed by inspection and palpation.

Nipple Examination

The nipple should be examined for discharge, inversion, or lack of mobility. Bleeding from a nipple in the presence of a breast tumor usually means cancer.

Any tumor should be checked as to size, consistency, mobility, and attachment to skin. Both axillea should be examined. If axillary nodes are found, they should be noted as to size, fixation, and consistency.

Sitting Examination

The patient should be first examined in the sitting posture, in a good light. Have her lean forward with arms outstretched and chin held up. Dimpling may appear over a breast lesion. Have her sit up and elevate her arms above her head. Have her place hands akimbo and press inward.

If a region of the breast is suspected, stretch the skin over this area with thumb and forefinger, to induce possible dimpling.

Have the patient lie down. Place a small pillow under one shoulder, thus flattening the breast on the chest wall. Palpate each quadrant. Palpate the nipple, then the axilla.

Large, Hard Node

A large, hard node in the axilla is most often carcinoma. Small nodes are often missed. Examine the other breast in similar manner.

Palpate supraclavicular and cervical lymph node areas. General physical examination is of course mandatory, with emphasis on pelvic and rectal examinations for concomitant gynecologic lesions.

Transillumination of the breast may help in diagnosis, but only to differentiate a cystic from a solid tumor. Any three-dimensional mass in a breast should be considered malignant until biopsied and proved benign.

Echograph Exhibited

At the Clinical Congress of the American College of Surgeons in Chicago in November, 1955, an echograph was exhibited, an instrument for diagnosing breast cancer by supersonic sound waves.

This instrument charts a graph dependent on the density of the tissue surveyed. Perhaps such gadgets may in time prove indispensable, but most of us must now depend on tactile and visual sense. In about 80 per cent of breast cancer cases, a lump is the first symptom.

River and Silverstein found that of 590 women who came to their clinic complaining of a lump in the breast, 35 per cent had malignancy.

Skin Retraction

Skin retraction is detected in perhaps one-half of the cases with cancer. Most common site of cancer is the upper and outer quadrant of the breast.

X-ray has been used in diagnosis of breast tumors, but this method has not been widely accepted. Discharge from a nipple, particularly if bloody, calls for smears and cytological examination. The careful pathologist may detect cancer cells in the smear. Aspiration biopsy is not favored by most authorities.

Sometimes Wrong

The most experienced surgeon may be wrong in 25 per cent to 30 per cent of cases on clinical examination. Excision of the tumor and microscopic examination is the only accurate means of diagnosis. Recent educational campaigns have succeeded in bringing women to the doctor earlier for examination.

Wevill found that in 1932, 14 months elapsed between onset of symptoms and beginning of treatment in the average patient, whereas in 1955 this period of waiting had been reduced to 8.2 months.

It is estimated that 98 per cent of breast tumors are first discovered by the patient. Nowadays, the woman who discovers a lump will run to the doctor. A great responsibility rests on the doctor who first examines the patient.

Treatment

Successful treatment of cancer of the breast can be accomplished best by radical mastectomy. In general, the criteria of operability have been:

1. Movable primary tumor.
2. Limitation of the metastases to the axilla of the side as the primary tumor (checked by roentgenograms of chest and skeleton).
3. Movable metastases.

Haagensen and Stout, after review of the patients who had undergone mastectomy for cancer of the breast at Presbyterian Hospital, New York, decided that the operation was not justifiable under the following conditions:

1. When the carcinoma is of the inflammatory type.
2. When there is extensive edema of the breast.
3. When satellite nodules have appeared in the skin of the breast.
4. When there is already edema of the arm.
5. When intercostal or parasternal nodes are involved.
6. When supraclavicular nodes are involved.
7. When distant metastases have occurred.
8. During pregnancy or lactation.

The last-named contraindication has been much disputed.

Technique Unsurpassed

In 1894 Halstead advocated radical mastectomy for cancer of the breast, and his technique has remained unsurpassed. Every radical operation should be preceded by biopsy and quick section.

This diagnostic procedure is favored for a case with bleeding nipple, as well as for the patient with a definite nodule. Where previously mastectomy was done for bleeding nipple, it is now contended that simple mastectomy is too radical for a benign lesion and not radical enough for a malignant one.

Cancer Found

Having biopsied the breast and found cancer, the surgeon and his assistants should change gowns and gloves, prepare the field again, and change instruments before proceeding with the radical operation. Recurrences in the wound have often been due to neglecting this careful technique.

Various modifications of incisions have been recommended, notably by Rodman, Orr, and McAfee. Incisions which extend into the axilla or onto the arm have been largely abandoned.

It is generally accepted that the incision should extend three or four centimeters beyond the tumor on all sides, but Wangensteen says that it is not necessary to sacrifice so much skin.

Closing The Wound

Closing the wound without skin graft is possible in most cases, a more simple problem in fat patients than in thin ones. Subcutaneous fat and fascia should be removed from the skin flaps medially to the sternum, upward to the clavicle, laterally to the latissimus dorsi muscle, and inferiorly to the sheath of the rectus abdominis.

The sternal portion of the pectoralis major muscle and all of the pectoralis minor should be removed en bloc with the axillary nodes.

Two Improvements

In closing the wound, two improvements in technique are recommended: (1) Suture the skin into the axilla with several sutures, thus eliminating dead space, and (2) drain the axilla and the lower portion of the chest wound with catheters attached to suction, to prevent accumulation of serum. Such accumulations invite infection and edema of the arm.

Operation Extended

Halstead advocated dissection of supraclavicular nodes, but this has been abandoned by most operators. Gordon-Taylor in 1948 extended the operation to include removal of anterior mediastinal nodes and internal mammary vessels, after resecting the second and third costal cartilages.

Wangensteen has adopted mediastinal dissestion as routine procedure with radical mastectomy.

Urban removes a portion of the sternum with parts of the upper four ribs, closing the chest wall defect with a fascia lata graft. Wide adoption of such radical procedures will undoubtedly increase mortality and morbidity, and their value remains to be proved.

Opinion Expressed

H. W. Meyer recently expressed the opinion that internal mammary node dissection should be done only at research institutions until its value has been definitely determined. There are many who feel that involvement of the internal mammary nodes should justify declaring the cause inoperable.

It seems probable that if cancer has extended into the chest it has extended further and is beyond surgical extirpation. We know that this is true too often in the presence of axillary metastases.

Other Extreme

At the other extreme regarding breast surgery stands McWhirter, of Edinburgh. He advises simple mastectomy and post-operative irradiation of the axilla as a method of treatment superior to radical mastectomy. He reports 56 per cent of 5-year cures in "operable" cases. Cade, of London, feels that McWhirter's work is a return to pre-Halstead days.

He points out that simple mastectomy is just as mutilating an operation for the woman as is radical mastectomy. He says that irradiation will not destroy all the cancer cells in the axillary nodes.

Records Reviewed

Ackerman reviewed records and microscopic slides for 719 consecutive patients treated by McWhirter, all with presumed cancer of the breast.

He found that: (1) A few had intraductal papillomas, not malignant. (2) At least 220 patients had received ovarian sterilization after mastectomy. (3) Others had excision of involved nodes, stilbestrol therapy, or testosterone.

(4) The incidence of local persistence of cancer in the operable group was higher than in properly-selected operable cases.

Irradiation

(5) Irradiation did not kill all the cancer in involved nodes. (6) There was considerable morbidity from McWhirter's irradiation, even necessitating amputation of the arm in three patients. Ackerman concluded that McWhirter's method was not superior to the well-planned radical mastectomy for the patient with operable breast cancer.

Valuable Adjunct

Irradiation therapy is a valuable adjunct in treatment. Preoperative irradiation has been generally discarded, but post-operative X-ray therapy is advised where axillary metastases are found at operation.

Such treatment follows the findings of Harrington at the Mayo Clinic, that longevity was increased for those patients with axillary metastases who had post-operative irradiation. Orr reported a similar procedure as favored at the University of Kansas, and the practice is widespread.

Inoperable Cases

Inoperable cases should have irradiation as palliative treatment. Pain is relieved, especially where bone metastases are present. The patient is improved in general health, and life is prolonged.

Meland, at the Los Angeles Tumor Institute, treated 176 cases of cancer of the breast with irradiation alone. His 5-year survivals were 69 per cent for Group I cases, 22 per cent for Group II, and 13 per cent for Group III.

Oophorectomy

Oophorectomy for cancer of the breast was first practiced by G. T. Beatson, in Glasgow, in 1891. Its field of usefulness seems to be in premenopausal women, where it is helpful in 22 to 25 per cent. Oophorectomy should not be done at the same time as mastectomy, but later. Irradiation of the ovaries may accomplish something toward eliminating ovarian hormones, but is less efficient than removing the ovaries.

Ackerman and Regato favor such irradiation in young women with bone metastases. Schonbauer and Schmidt-Ueberreiter followed 205 patients after mastectomy, found that of 104 deceased patients, 85 had had functioning ovaries, while of 107 surviving, the ovaries were active in only 16.

Adrenalectomy and Oophorectomy

Adrenalectomy and oophorectomy combined have been tried for advanced breast cancer. Galante et al performed this operation on 31 women. Some had metastases to bone, soft tissues, or both. Desoxycorticosterone with cortisone acetate was used for substitutional therapy. Of 19 surviving patients, mean survival after operation was 10½ months.

Objective improvement was seen in 22 per cent, but 45 per cent had subjective benefit. Pyrah and Smiddy did bilateral adrenalectomy and bilateral oophorectomy in 22 advanced cases, with improvement in 10. Treves says that castration should be performed at least six weeks before adrenalectomy.

Mortality High

Mortality is high — Huggins reported 7.8 per cent mortality within 30 days in 115 cases of widespread cancer. It is evident, however, that the combined operation can produce a major remission in some patients with advanced metastatic mammary cancer.

It is most successful where the breast lesion is adenocarcinoma. Randall, of Memorial Hospital, New York, reports remissions of breast cancer after nine months were 44 per cent after oophorectomy, 45 per cent after adrenalectomy, and 65 per cent after combined oophorectomy and adrenalectomy.

Testesterone Proprionate

Since Loeser's pioneer work in 1937, testesterone proprionate has been widely used. Bone metastases respond particularly well to the male hormone, with relief of pain. An effective dose is 50 mg. three times weekly. Treatment should be continued three months before deciding it is ineffective. Loeser now reports better results by using thyroid and testosterone together.

His latest contribution is reporting that large doses of thyroid prevent recurrences of cancer. Androgens may be used in women under 60 in whom cancer in the soft tissues cannot be checked by irradiation. Prudente, of Brazil, in 1945 used testosterone proprionate in doses of 25 to 175 mg. per week after radical mastectomy.

Good Results

He reported the results were 100 per cent better than after operation alone. One hormone may prove successful in palliation, later may become ineffectual. Cessation of therapy or change to an antagonistic hormone may then be of help.

Thus one may on occasion shift from androgen to estrogen, with satisfactory results. Randall says that estrogen should be used only after the patient is ten years past the menopause.

The author agrees with Huggins, who believes that when satisfactory elucidation of the cancer problem has been achieved the hormones will be found to occupy a position near the center of the problem.

Estrogens and Androgens

English radiotherapists first used estrogens and androgens and showed that these hormones have an important role in cancer of the breast. In 1944, reports of results in 100 patients revealed that in those under 60 years of age, 15 per cent were improved, while in those older than 60, improvement was seen in 47 per cent.

Nathan and Adair showed striking benefit in older women when large doses of estrogens were used. Inoperable and ulcerating lesions of the breast actually healed and regressed in size.

Subjective improvement results in many patients who show no objective relief. They feel better, have better appetite, increase their activity, and are relieved of much of their pain.

Objective Benefit

Lemon, of Boston University, reports about 50 per cent of a small group of oophorectomized premenopausal patients shows objective benefit when given cortisone and hydrocortone. He used an initial dose of 200 mg. daily, followed by a maintenance dose of 100 mg. Vitamin B12 and potassium chloride were administered with the cortisone. Other reports find cortisone ineffective in breast cancer.

Results

Since we cannot accurately estimate host resistance and cannot rule out metastases, we can give no accurate prognosis in any given case of cancer of the breast. However, it is possible statistically to predict the average survival in a series of cases. Daland found that the average duration of life for 100 consecutively *untreated* patients with breast cancer was 3.4 years. 40 per cent were alive after three years, 22 per cent after five years, nine per cent after seven years, and five per cent after 10 years. Our methods of treatment must do better than this or they are worthless.

Figures Cited

The following figures will demonstrate that radical mastectomy is worthwhile. These are figures of survivals following radical mastectomy:

		Over-all survival	Breast aone involved	Breast and axilla involved
Adair, Memorial Hosp.	5 Yr. survival	54.4	77.5	39.4
	10 Yr. "	33.8	53.8	21.2
Harrington, Mayo Clin.	5 Yr. "	51.2	78.3	32.5
	10 Yr. "	31.1	54.5	15.5
Guthrie, Guthrie Clin.	5 Yr. "	52.0	76.0	46.0
	10 Yr.	—	40.9	9.8
Rosenquist, Karolinski Hospital, Sweden.	5 Yr. "	54.4	70.9	42.5
Lahey Clinic	5 Yr. "	52.0	75.0	37.0

These figures show that a woman with cancer of the breast has a 75 per cent chance of living five years after radical mastectomy if the breast alone is involved, but only about 35 per cent chance if the axilla is involved. Similar figures were reported by Haagenson and Stout, who reviewed 495 radical mastectomy cases at the Presbyterian Hospital, New York. They found 48.7 per cent alive after five years. Harrington's latest figures, for the years 1940 to 1944, showed some improvement, with 85.6 per cent surviving five years.

Shimkin, at the University of California, reported results according to stages. In Stage I (carcinoma localized to the breast) 77.3 per cent of 225 cases were alive five years after radical mastectomy. But of 87 cases in Stage III (with skin involvement, extensive axillary metastasis), only 16.4 per cent survived five years. Such figures emphasize the importance of early treatment.

Summary and Conclusions

1. Carcinoma of the breast is a deadly disease, etiology unknown, often slow in onset, difficult to detect in the early stage.
2. Every suspicious breast lump should be biopsied to rule out malignancy.
3. Radical mastectomy is the treatment of choice for breast cancer. Irradiation is a useful supplement to surgery, and for palliation hormones or irradiation are useful. Oophorectomy or adrenalectomy, often combined, contribute to remissions in some cases.
4. Approximately 75 per cent to 85 per cent of women with breast cancer can be saved for five years or more if subjected to operation before axillary involvement occurs. After metastasis to axillary nodes has occurred, the salvage rate drops to about 35 per cent.

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Texas Orthopaedic Association to Meet in Galveston April 23

Annual meeting of the Texas Orthopaedic Association will be held in Galveston, Texas, April 23 in connection with the annual convention of the Texas Medical Association in Galveston, April 22 through 25.

Ob-Gyn District 8 to Meet April 9-11 in Tucson

Annual meeting of District 8 of the American Academy of Obstetrics and Gynecology will be held in Tucson from April 9th through the 11th, with headquarters in the Pioneer Hotel.

District 8 includes the 11 western states: British Columbia, Saskatchewan and Alberta in Canada; and Alaska and Hawaii. Dr. H. S. Rhu, Jr., of Tucson is in charge of plans for the meeting.

Clinical Notes From Grand Rounds

These notes are abstracts of opinions expressed by staff members during case presentations at the Friday Grand Rounds of the Pratt Diagnostic Clinic — New England Center Hospital.

Porphyria may be congenital or acquired. The acquired types may be associated with lead intoxication or the administration of sulfonal or the barbiturates. It is occasionally seen in pregnancy and in association with liver disease.

The Role of Histoplasmosis in Colonic Disease*

By Donald C. Collins, M. D., M. S. (Path. & Surg.), Sc. D., F. A. C. S., F. I. C. S., F. A. C. G., F. A. C. C., F. I. A. P., Assistant Professor of Surgery, College of Medical Evangelists, Los Angeles.

There is a relatively new disease of the colon that all should become familiar with immediately. Fifty years ago, Darling[7] first recognized this new pathologic entity at The Ancon Hospital after a three years' study of 33,000 patient admissions. Three fatal instances were recorded in two negroid and one chinese resident of Panama. The specific organism was mistakenly identified as being a protozoa and was thus called Histoplasma capsulatum.

In the early years of this century, sporadic case-reports appeared in the literature, always describing fatal results. This same organism was earlier described in 1885 by Flemming[9] as "tingible Korpern." Tokishige[22] in 1896 mistook this disease for Blastomycosis. As late as 1921, Latta[14] referred to these specific organisms as being degenerative lymphocytic nuclei.

In 1934, de Monbreun[17] proved the true fungus origin of Histoplasmosis by successfully growing the Histoplasma capsulatum from both the blood stream and the spleen of a six month old infant, who died twelve days following hospital admission. The life cycle of this organism can only be completed by passing the mycelial form through animals, such as the dog, horse, cow, etc.

First Recorded Instance

Riley and Watson[21] in 1926 described the first recorded instance of American Histoplasmosis occurring in a human in Minnesota. Meleney[16] in 1940 added thirteen new unpublished case-reports of this disease to the literature and classed this infection as being: "Reticuloendothelial Cytomycosis." In 1941, Conant[5] presented extensive cultural studies of this organism and completed its life cycle by employing blood agar slants sealed with paraffin. He classified this disease as a fungus in the group of Monoiliaceae of the fungi imperfecti.

In 1943, the important fact was presented by Long and Stearns[15] that Histoplasmosis could exist in a benign, very mild, non-fatal form. They formed these important conclusions after studying 53,400 chest x-ray films of inductees during the early years of World War II. Brief descriptions of Histoplasmosis first appeared in text-books on tropical diseases and clinical mycology in 1944 and 1945.

In 1948, Furcolow, Bunnel and Tenenberg[10] presented a reliable diagnostic complement fixation test for human Histoplasmosis. During this same year, Rawson[20] discovered that the Histoplasma capsulatum possessed a diagnostic acid-fast property similar to Myobacterium tuberculosis.

2,135 Appendices

In 1950, Raftery, Trafas and McClure[18] studied

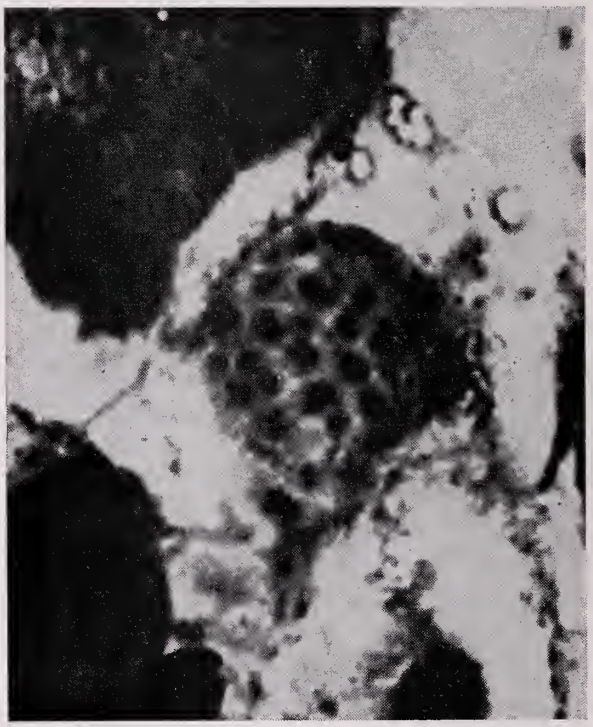


Plate 1

Histoplasma capsulatum organisms in the cytoplasm of a reticuloendothelial cell of a submucosal lymph node of the left colon. Gross pathological diagnosis: — "Chronic ulcerative colitis." x 1300.

2,135 appendices and reported that on an average five per cent of all types of appendicitis reveal the presence of the Histoplasma capsulatum in the "germinal centers" of the submucosal lymph nodes. However, in thirty instances of proven mesenteric lymphadenitis, thirteen (43 per cent) of the appendices demonstrated the presence of the specific organism.

The next year, Raftery[19] reviewed 436 examples of "chronic appendicitis," lymphoidhyperplasia and normal appendices collected during the preceding decade from children less than sixteen years of age admitted to The Henry Ford Hospital of Detroit. Ten per cent of those reexamined appendices were found to contain the Histoplasma capsulatum. Also, there was found to be an associated high incidence of lymphoblastoma with Histoplasmosis.

Five Years Ago

It was only five years ago that Conant[6] and Iams[13] independently concluded that this disease exists endemically in the United States in two widely different forms, namely: one, highly fatal, and the second, primarily benign, where in the latter instance the vast majority of patients get well without specific

*Delivered before the International Academy of Proctology, Phoenix, in connection with the 1955 Annual Meeting of the Southwestern Medical Association.

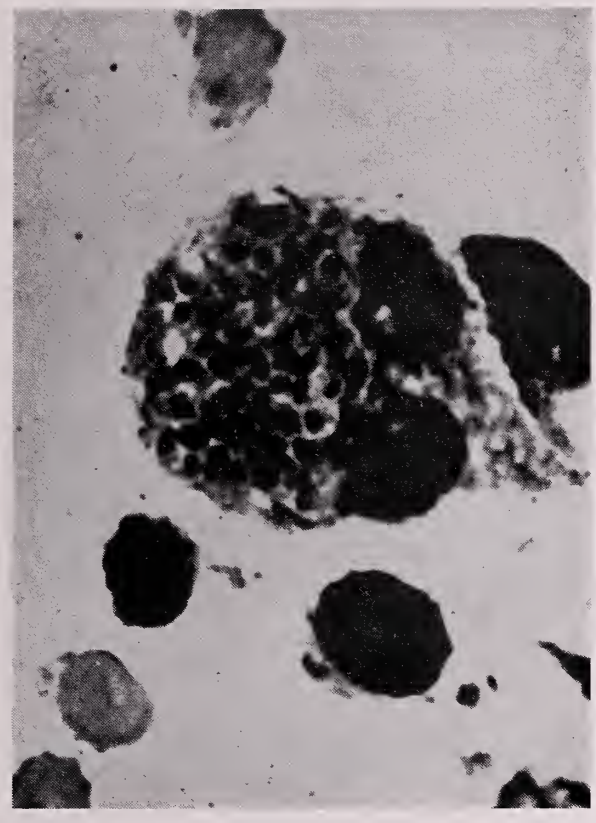


Plate 2

Mononuclear cell containing many Histoplasma capsulatum organisms in its cytoplasm. From "germinal center" of submucosal lymph node in transverse colon. Gross pathologic diagnosis: — Adeno-carcinoma. Grade iii with metastases. x 1300.

therapy and without active continuance of their illness.

Up to 1949, Cariker[1] stated that only 123 human instances of Histoplasmosis had been recorded in the literature. Histoplasmin skin tests were eighty-four times more common in the humid areas of Kansas when compared to the arid regions of that state.[11]

In 1952, the Hotchkiss — McManus modification of the Schiff's periodic acid stain was first presented. Today, this excellent staining technic gives the investigator a highly reliable and fast screening method of positively identifying the Histoplasma capsulatum in the cytoplasm of infected cells. Furcolow and Larsh,[12] among numerous investigators, have warned that a highly infectious type of broncho-pneumonia, due to the Histoplasma capsulatum, can follow the inhalation of dust from soils contaminated by this fungus.

"Camp Gruber (Oklahoma) pneumonitis" or "cave-sickness" is caused by this specific organism. In 1953, Farrell, Cole, Prior and Saslow[8] demonstrated that they could only reproduce this disease with fatal results in dogs by the intratracheal innoculation of the yeast-phase of the organism. Innoculation of the Histoplasma capsulatum by stomach tube was a failure and all the dogs survived free from the disease.

Endemic Area

This year, Zeidberg, Ajello and Webster,[24] writing from Williamson County, Tennessee, an endemic area, found that soils "positive" for Histoplasma capsulatum had a higher acidity than "negative" soils. In September of this year, White[23] was able to report his experiences with 229 patients having mild pulmonic Histoplasmosis. All of these patients had positive histoplasmin skin-tests and had been followed in a tuberculosis chest clinic for observation periods varying from five to twenty years.

No patient had died from this disease. He believed that this disease was most commonly encountered among farmers and other rural residents exposed to contaminated soils. It is noteworthy that benign pulmonary Histoplasmosis was not generally recognized as a specific disease entity until mass roentgenographic and tuberculosis-testing surveys were applied to "healthy" population groups.

151 Instances

This year, I[3] presented a study of 151 instances of surgically proven juvenile mesenteric lymphadenitis. Seventy-eight (52.6 per cent) were positive histologically for Histoplasmosis. In addition over 64.8 per cent of 123 appendices surgically removed during the past decade for this disease exhibited positive histoplasmin skin-tests, while over 12.8 per cent demonstrated positive specific complement fixation tests.

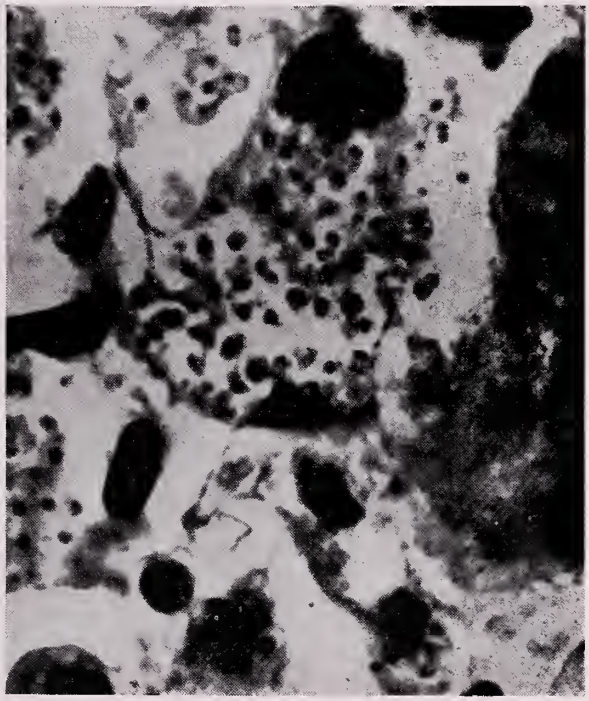


Plate 3

Numerous Histoplasma capsulatum organisms in a right colon submucosal lymph node macrophage. Gross pathologic diagnosis: — "Chronic ulcerative colitis." x 1300.

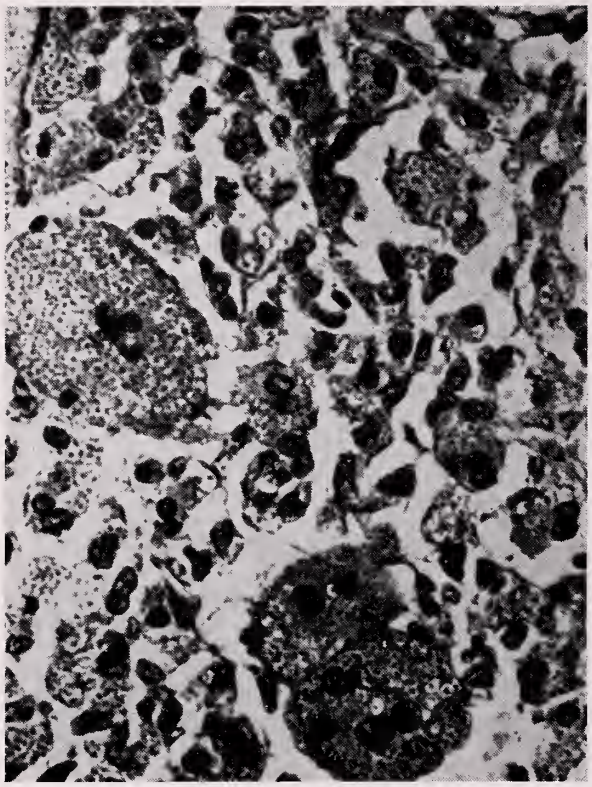


Plate 4

Histoplasma capsulatum organisms filling the cytoplasm of two large macrophages and smaller lymphocytes and reticuloendothelial cells of a "germinal center" of a regional lymph node near the sigmoid flexure of the colon. Gross pathological diagnosis: — "Chronic ulcerative colitis." x 840.

Of twenty-four patients previously reported in 1936 by the Author,[2] a further follow-up study revealed that 62.5 per cent had positive histoplasmin skin-tests, and 83.3 per cent revealed the typical calcified bilateral hilar and parenchymal nodes of healed or healing Histoplasmosis. In October of this year, the Author[4] reported the final end results of a thirty-four years' continuous study of the vermiform appendix, comprising of 50,000 specimens. In 3,905 instances (7.81 per cent) in this large series, there was definite and characteristic evidence of the presence of the Histoplasma capsulatum.

None of these 3,905 patients died from Histoplasmosis, attesting to the benign form of this fungus infection that has become endemic in the United States.

Present Status

At the present time it is commonly agreed that Histoplasma capsulatum has a world wide distribution. This disease is endemic in the following areas of the United States: — the Mississippi River Valley, the slopes of the Appalachian Mountains, Minnesota, Florida and the Pacific Coast line. This disease can exist in a mild and benign form commonly seen in children and adolescents.

Peculiarly, this illness is characterized by a diffuse mycosis of the cytoplasm of the various cells that comprise the human reticuloendothelial system. Histoplasmosis in the young is characterized by fever, gastroenteritis, leucopenia, diffuse and extensive lymphadenitis of commonly the gastrointestinal tract and a brief hepatosplenomegaly.

Laboratory Identification

This fungus is classed as being one of the Moniliaceae of the fungi imperfecti (septate mycelia), having no sexual spores. This organism is very closely related to both the Blastomycosis Dermatitidis and Blastomyces Brasiliensis, as well as the Sporotrichium Schenckii. Thus, it is not strange for histoplasmin or complement fixation tests for Histoplasmosis to unfortunately give occasional false positive results in the presence of one of the other three closely related organisms.

This fungus is best demonstrated in the tissues by the Hotchkiss — McManus modification of Schiff's periodic acid stain. Less excellent staining technics are provided by the Giemsa, Rawson's[20] modified acid fast stain and hematoxylin and eosin stains.

Reader Referred

Culturally, this organism grows characteristically



Plate 5

Left colon submucosal lymph node showing a "germinal center" in which are clearly seen large macrophages surrounded by a clear halo area, giving the so called "starry sky" appearance. Numerons Histoplasma capsulata are present in the cytoplasm of the macrophages. Gross pathological diagnosis: —"Chronic ulcerative colitis." x 240.

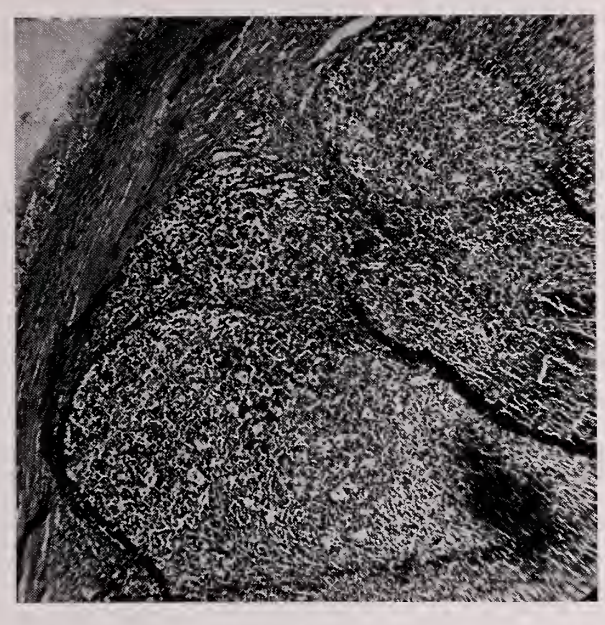


Plate 6

Cecal submucosal lymph node showing two "germinal centers" in which are clearly seen typical "starry sky" phenomena. Numerous Histoplasma capsulata are present in the cytoplasm of the macrophages. Gross pathological diagnosis: —"Non-specific regional enteritis of the terminal ileum and the cecum." x 240.

on both Sabouraud's and Littman's ox-gall media. For further details the reader is referred to a previous article[3] upon this subject that goes into greater details. At 37° C. the organisms are small, round, oval, budding yeast-like cells. Microscopically in tissues the fungus is primarily intercellular and is oviform or round surrounded by a clear, refractile achromatic zone or capsule.

The organism does not stain homogeneously, but very irregularly, rarely do any two organisms look exactly alike. The body consists of a deeply staining eccentric, commonly semilunar shaped nucleus, often situated at one end of the fungus. There are achromatic vacuole spaces, which in the Histoplasma duboisii have been demonstrated to contain fat.

The deeply staining chromatin is usually situated at one end of the body, sometimes consisting of a single mass or several small masses of chromatin. Sometimes it is ringed in shape and occasionally extends along half of the periphery of the body, being crescentic in shape.

Dot or Rod

Occasionally a chromatin dot or rod is seen near the larger chromatin body or it may be at the opposite side or end. The vacuoles are irregularly placed and are of varying size and extent. These small (1 - 5 micra) oval, yeast-like cells are found characteristically in the cytoplasm of macrophages and other reticuloendothelial cells of the bone marrow, lymph nodes, spleen, liver and blood stream. A uniform histologic picture was noted in involved instances, consisting of a marked lymphoid hyperplasia with very prominent lymphoid follicles and broad "germinal centers" containing scattered large diagnosic macrophages giving the pathognomonic "starry — sky"[19] effect of reactive hyperplasia. The organisms appear in the cytoplasm of these large phagocytic and reticuloendothelial cells of the lymph node "germinal centers" in widely varying numbers.

Reasons For This Study

In view of the results obtained by my two[3, 4] previous studies, showing a high incidence of the Histoplasma capsulatum in the appendices of patients with surgically proven juvenile mesenteric lymphadenitis, and an overall incidence of 7.81 per cent in 50,000 appendices studied; it appeared that a restudy of the surgical tissues removed during the performance of colon surgery for varying disease entities might prove of interest and value. This study has been in progress for the past three years. Similar technics as previously described[3] were employed again in this study. For the purposes of brevity, the reader is referred to that earlier contribution for further technical details.

Materials

A review was made of the available tissue saved from all types of surgical procedures performed on the colon (except appendectomies, which have already been adequately studied[4]) in two large hospitals during the past decade in Los Angeles. The same general technic was employed as was described previously in a previous contribution of mine[3] and will not be repeated here. This review has taken over three years to complete.

Results

For purposes of brevity as well as clarity, the results of this three year study are tabulated and summarized in CHART I. It is believed that the data is self explanatory and will need no further elaboration.

Chart I

INCIDENCE OF HISTOPLASMOSIS IN 1,205 PATIENTS WITH SURGICALLY TREATED COLON DISEASES:

COLON — DISEASE:		PROVEN HISTOPLASMOSIS:	
Disease:	Number of Cases:	Number of Cases:	Per Cent of Disease:
Carcinoma.	546	49	8.974
"C. U. C."	179	64	35.754
Diverticulitis.	96	12	12.500
Fistulae.	81	7	8.642
Polyposis.	69	6	9.335
Volvulus.	61	5	8.197
Megacolon.	57	5	8.772
Tuberculosis.	45	6	13.333
Benign Tumors.	38	5	13.158
Actinomycosis.	16	2	12.500
Sarcoma.	9	1	11.111
Miscellaneous.	8	2	25.000
Grand — Totals:	1,205	164	13.610
(Non-Specific Regional Enteritis of Small Intestine.)	219	69	31.507

Discussion

After studying these 1,205 examples of surgical treatment of the various diseases of the colon as well as the additional 219 instances of non-specific regional enteritis of the small intestine, I firmly believe that the "starry – sky"[19] found in the "germinal centers" of the regional and submucosal lymph nodes offers a quick and fairly accurate screening method when searching for a possible Histoplasmosis capsulatum infection of either the small or large intestine.

If this phenomena of reactive hyperplasia is absent, I have had great difficulty in finding the characteristic cytological lesions. Very few lymph nodes exhibiting "starry sky" phenomena failed to promptly demonstrate the intercellular Histoplasma capsulatum. It is the considered belief of this Author that this peculiar tissue reaction observed in the "germinal centers" of the lymph nodes of both the small and large intestine is just as pathognomonic of a Histoplasma capsulatum infection; as the tubercle formation with its multinucleated giants cell is usually characteristic of the presence of Tuberculosis.

Great Increase

The great increase of "positive" slides in instances of various types of "chronic ulcerative colitis" and again in cases of "non-specific regional enteritis" of usually the small intestine, raises the question of whether or not this increased incidence is of real significance.

A milder, though similar disease, juvenile mesenteric-lymphadenitis, appears from recent studies[3, 18, 19], to demonstrate a rather marked increase in "positive" histologic tissue sections that possesses mathematical significance.

Possibly in the near future, further investigations will reveal that the Histoplasma capsulatum is the principal etiologic agent in the causation of the somewhat similar diseases of "chronic ulcerative colitis," "non-specific regional enteritis of the small intestine" and juvenile mesenteric lymph adenitis.

Summary

1,205 instances of surgical excision of colon tissues for a variety of diseases in the past decade in two hospitals in Los Angeles have been reviewed for the presence of Histoplasma capsulatum. Similarly, 219 examples of non-specific regional enteritis of the small intestine were similarly studied. This review took more than three years to complete. From previous similar studies on the vermiform appendix[3, 4], it appears fairly well established by these earlier extensive studies that the "starry – sky" phenomena seen in the "germinal centers" of lymph nodes throughout the body is a highly specific and characteristic histologic reaction to an infection by the fungus, the Histoplasma capsulatum.

Basing my thesis on that earlier extensive work, it appears that "chronic ulcerative colitis," "non-specific regional enteritis of the small intestine" and juvenile mesenteric lymphadenitis may well represent varying stages and degrees of infection of the human host by this unusual fungus, the Histoplasma capsulatum.

It also appears to be fairly well established that probably, on an average, about ten per cent of the general populace in an endemic area carry the stigmata of infection by this widespread fungus. In temperate climates, the Histoplasma capsulatum appears to be a far more benign organism and does not cause the high death rates that its infestations produce apparently in the tropics.

Conclusions

1. 1,205 instances where surgical tissues were excised from the colon for a wide variety of diseases have been reviewed to determine the incidence of Histoplasmosis.

2. In 179 examples of "chronic ulcerative colitis," 35.8 per cent were positive for Histoplasma capsulatum.

3. In 219 examples of "non-specific regional enteritis of the small intestine," the incidence of Histoplasmosis was 31.5 per cent.

4. Disregarding the high incidence of Histoplasmosis in 'chronic ulcerative colitis," the average incidence of this disease in the remaining "positive" histologic instances in the colon is 8.299 per cent. This incidence is in agreement with other published studies of the past five years.

5. It is highly probable that Histoplasma capsulatum may be the principal etiologic agent of "chronic ulcerative colitis," "non-specific regional enteritis of the small intestine" and juvenile mesenteric lymphadenitis. These three diseases may merely represent varying degrees of tissue reaction to the same organism and tempered by the individual's health and tissue resistance.

Varying Stigmata

6. It appears probable that between eight and ten per cent of the population in an endemic area of the United States bears varying stigmata of Histoplasmosis.

7. Apparently Histoplasmosis in the United States is a benign and mild disease, that seldom is rapidly fatal as it may be in the tropics. It also appears that this disease is very widespread in distribution and has only been recognized and paid any attention to in the past five years.

8. The "starry sky" of reactive hyperplasia seen in the "germinal centers" of lymph nodes is just as diagnostic and characteristic of Histoplasma capsulatum infections, as the typical tubercle formation is of Tuberculosis. As soon as this fact is generally accepted, and publicized the recognition of Histoplasmosis will be accelerated.

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Blood Banks to Meet September 3-5 in Boston

The 9th Annual Meeting of the American Association of Blood Banks will be held September 3-5 in Boston. Inquiries should be directed to Miss Marjorie Saunders, Secretary, 725 Doctors Building, 3707 Gaston Avenue, Dallas.

Texas District one Medical Association to Meet in Pecos Feb. 15

Annual meeting of District One of the Texas Medical Association will be held in Pecos, Texas, February 15, 1956. Dr. Delphin von Briesen of El Paso, president, has announced.

Presenting scientific papers will be:

Dr. James A. Evans, in the Cardiovascular division of the Department of Internal Medicine at the Lahey Clinic in Boston, "Modern Approach to the Treatment of High Blood Pressure".

Dr. Ross W. Rissler, El Paso, "Some Basic Concepts Regarding Recent Steroid Hormone Studies".

Dr. Branch Craige, El Paso, "Headache".

Dr. David M. Cameron, El Paso, "Whiplash Injuries of the Neck".

More Papers

Dr. Frederick Bornstein, El Paso, "Acute Cardiac Deaths from Conditions other than Coronary Occlusion".

Dr. Robert N. Caylor, El Paso, "Ocular Problems of Children".

Dr. E. S. Crossett, El Paso, "Injuries of the Chest".

Other officers are Dr. E. W. Schmidt, Pecos, vice-president, and Dr. Grady Morrow, El Paso, secretary-treasurer. Dr. Charles E. Oswalt of Fort Stockton is the Councillor for District One.

District One consists of the following counties in West Texas: El Paso, Hudspeth, Culberson, Reeves, Loving, Pecos, Presidio, Brewster, Jeff Davis, Ward and Winkler.

Clinical Notes From Grand Rounds

These notes are abstracts of opinions expressed by staff members during case presentations at the Friday Grand Rounds of the Pratt Diagnostic Clinic — New England Center Hospital.

The association of bone disease with Jewish origin should suggest the possibility of Gaucher's disease. This is a familial disturbance in which there may also be marked splenomegaly. Removal of the spleen at times will give some relief because of elimination of hypersplenism. When Gaucher's disease begins in infants, the prognosis is poor, but when it begins later in life, the prognosis is somewhat better.

▲ ▲ ▲

Measurement of the 24-hour urinary excretion of 17-hydroxycorticoids before and after the administration of ACTH is a useful procedure in the diagnosis of disorders of the adrenal cortex. Normally there is a moderate rise. In Addison's disease there is little if any change, but in Cushing's syndrome there is a marked rise in the excretion of this hormone.

▲ ▲ ▲

The serum iron is apt to be elevated in acute infectious hepatitis and low or normal in cirrhosis. Increased values may be due to lysis of liver cells.

Evaluation of Liver Function Tests

By William D. Sedwick, M. D., Las Cruces, N. M.

The accurate diagnosis of disease of the liver can produce a most perplexing, and at the same time, a most important problem. For instance, it is dangerous to the life of a patient with a common duct obstruction not to be surgically explored, and equally as dangerous to operate on a patient with severe hepatitis. However, this mistake will still be made, since the liver has such a complex structure and physiology that a correct diagnosis is difficult. Much has been learned about the liver, but equally as much remains to be discovered.

It is the purpose of this paper to again present a discussion of liver physiology and an evaluation of the clinical observation and laboratory examinations which are helpful in arriving at a diagnosis.

Physiology

A brief review of hepatic physiology will lay the foundation for the later discussion of liver function tests. The liver is composed of three major systems: the blood vessels, the biliary systems, and the liver cells (or parenchyma). A pathologic process may involve one system initially, but if the process continues, all three systems will eventually be involved.

Vascular disorders are usually the result of impeded outflow in the hepatic veins. Most commonly, this is due to right heart failure, but also to constrictive pericardial disease, obstruction of the inferior vena cava by tumor, or thrombosis of the hepatic veins (Chiari's Syndrome). Continued congestion subjects the parenchymal cells surrounding the central vein of the lobule to anoxia and necrosis, thus the "Nutmeg liver". After months of congestion, fibrosis, both central and portal, will develop.

Biliary disorders usually result from the obstruction of the common duct. Variable pathologic changes will result, depending upon the acuteness of the obstruction, its duration, the presence and function of the gallbladder, and the development of infection.

Parenchymatous disorders result from infectious agents, toxins, anoxia, metabolic and nutritional difficiencies.

Physiological Functions of the Liver, with Related Tests

At this point, brief discussion of the various physiological processes performed by the liver and hence involved in pathologic processes, is in order.

I. Bile Pigment Metabolism: The normal red blood cell lives about 120 days, so that approximately one per cent of the circulating cells are destroyed each day by the reticulo-endothelial system. The hemoglobin is broken down into the various constituents. One of the "by products" is bilirubin. This is transported to the liver as the large molecule bilirubin-globin. Here the globin is separated for re-use and the bilirubin (or bilirubinate) is excreted into the intestinal tract. Bilirubin is first reduced by bacterial action in the colon, to urobilinogen, a colorless chromagen. It is then oxidized, again by bacterial action, to urobilin, an orange-brown pigment. There is good evidence that as much as fifty per cent of the urobilinogen is reabsorbed into the portal circulation, returned to and removed by the liver. A small portion normally passes on into the systemic circulation and is excreted by the kidney.

Figure I diagramatically illustrates the normal bile metabolism.

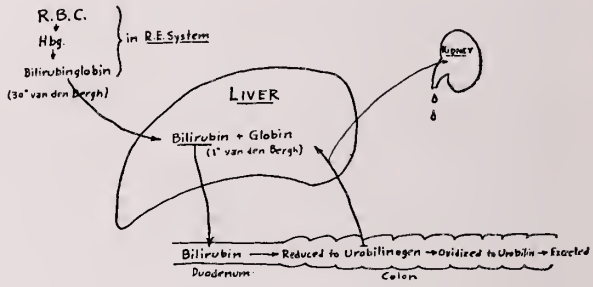


Fig. 1

Types of Jaundice

From the diagram (Fig. I), can now be deducted the mechanisms of the three types of Jaundice. The simplified classification of (1) Surgical or obstructive Jaundice, (2) Medical or parenchymal Jaundice, and (3) Hemolitic or prehepatic Jaundice will be used.

I. Surgical (or obstructive)

This is due to obstruction of the extraphepatic bile ducts. (Post hepatic Jaundice of Ducci). Here the serum one-minute bilirubin is increased. Urine bilirubin is present. There is no bilirubin passed into the intestinal tract, so no urobilinogen is in the stool (clay colored), and thus no urobilinogen occurs in the urine.

2. Medical-Parenchymal (including hepatocanalicular pathology). This is the hepatic Jaundice of Ducci.

There is a leak back of bilirubin into the hepatic vein due to loss of integrity of some of the parenchymal cells and canaliculi. Serum bilirubin is increased and bile is excreted in the urine. There is increased excretion of urobilinogen in the urine. This is due to the fact that, although urobilinogen is absorbed in normal fashion from the intestinal tract, the "sick" parenchyma cannot re-excrete it, and is then passed on to the systemic circulation and excreted by the kidney.

3. Hemolytic Jaundice - or (Acholuric Jaundice) Prehepatic Jaundice of Ducci.

In this condition more bilirubinglobin is offered to the parenchyma of the liver than it can excrete per unit of time. Thus, the one minute bilirubin may be slightly increased, but the total bilirubin is markedly increased. Since the bilirubinglobin mollecule is too large to pass thru the glomerulus of the kidney, it stays in the circulation. Thus, no bile occurs in the urine (Acholuric Jaundice). However, there is increased stool uribilinogen and increased urine urobilinogen.

Comments

The following comments are now apropos. Medical and Surgical Jaundice often are not "pure". In any hollow tube in which there is an element of obstruction, infection usually develops. Thus, in common duct obstruction, infection will develop above the obstruction, converting some of the bilirubin to urobilinogen, which is then excreted in the urine. Thus is explained the presence of some urinary urobilinogen in obstructive jaundice.

The van den Bergh test is of little help in differentiating between Medical and Surgical Jaundice. It will help differentiate hemolytic jaundice from the other types. However, a much simpler differentiation is presence or absence of bile in the urine. Typically, hemolytic jaundice is acholuric.

II. Synthetic and Metabolic Functions

A. Protein synthesis is one of the important synthetic functions of the liver. These are prothrombin, fibrinogen, cholinesterases, and albumin. Tests of this function are: (1) Floculation tests, (2) Prothrombin determination, and (3) Quantitative values of proteins.

B. Carbohydrate metabolism - Tests of this function are the Glucose tolerance test and the Galactose tolerance and clearance test. The Galactose clearance from the blood stream depends entirely on proper liver function and is not variable by other body physiology. Thus, it is a more accurate test of the carbohydrate metabolic function of the liver than is the glucose tolerance test.

C. Fat metabolism - Tests of this function are blood cholesterol and cholesterol ester determination, and Vitamin A Esters.

D. Vitamin synthesis and metabolism - The fat soluble vitamins, A, D, E, and K, require bile for proper absorption from the intestinal tract. The water soluble vitamins can be absorbed without bile being present, but their metabolism is altered by liver disease.

E. Excretory functions - Certain substances normally produced in the body, or that are introduced, and excreted by the liver. These are: (1) Alkaline phosphatase, (2) Bile salts, (3) Dyes, such as Bromsulfalein (BSP), and sometimes foreign substances.

F. Detoxification and Conjugation - Narcotics are detoxified by the liver. Hence in liver disease

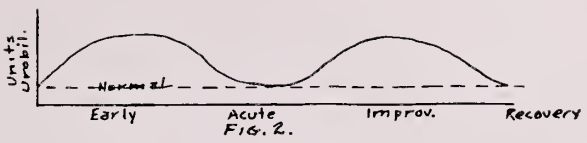


Fig. 2.

normal doses of narcotics may produce more sedation than is desired.

Estrogens and other hormones are detoxified in the liver. In cirrhosis, estrogens are not detoxified and the resulting emergence of some female characteristics are noted, such as loss of axillary and pubic hair, increased size of breasts, loss of libido, etc. It is also thought that part of the cause of ascites and edema in cirrhosis may be due to the lack of detoxification of the antidiuretic hormone produced in the pituitary gland.

Benzoic acid can be introduced into the body where the liver conjugates it with glycine to produce hippuric acid, which is then excreted by the kidney.

G. Water metabolism - Here again the lack of detoxification by the liver of the antidiuretic hormone comes into play. Also the decreased production of serum albumin with the resulting decrease in intravascular osmatic pressure has an effect. Normal electrolyte concentration may also be effected.

H. Heat Regulation - The methods for this phenomenon are as yet unknown, but there is reason to believe that the liver is involved.

I. The effect on the hematopoetic system and hemostosis - It is well known that in chronic disease of the liver there is frequently a shortened survival time of red blood cells. This results in anemia. Capillary integrity is sometimes involved. Also, in the severe liver diseases the production of prothrombin and fibrinogen are reduced.

J. "Filtering" bacteria - There is little doubt that bacteria are frequently present in the portal circulation and carried to the liver. Here they are phagocytized by the Kupffer cells.

Liver Function Tests

For what reasons do we employ liver function tests?

I. To help in the differential diagnosis between Medical and Surgical Jaundice.

II. To diagnose unsuspected liver disease and to assist in the follow-up of acute liver disease during recuperation.

III. To help in the estimation of the severity of liver disease, and in the prognosis as to outcome.

I. Differentiation between Medical and Surgical Jaundice.

The differentiation between Medical Jaundice and Surgical Jaundice often is not too difficult. There are, however, those cases of jaundice which sorely tax the ingenuity and intelligence of the physician and defy accurate distinction.

A detailed history and physical examination with the routine blood, urine, and stool examinations frequently are sufficient to establish an accurate diagnosis. For instance, Acholuric Jaundice means hemolytic jaundice, and in so far as the determination of the cause for jaundice is concerned, there is little reason, except academic, for running further tests.

Basic screening procedures:

a. History
b. Physical examination
c. Routine blood studies, including platelet estimation and serology.
d. Routine urine, including an accurate test for bile, such as the Harrison spot test.
e. Stool - inspection and test for occult blood.
f. Bilirubin metabolism - (screening)
   1. Icterus index. The color of the plasma, is often sufficient for screening.
   2. Bilirubin in urine - Harrison spot test.

When the above screening procedures are accurately performed, a presumptive diagnosis often can be made with reasonable accuracy. That is, whether hepatocellular, or parenchymal pathology is at fault; or whether hepatocannicular, or duct obstruction exists. Appropriate tests can then be selected.

It should be emphasized that results of the various tests can be confusing in that abnormal results may be obtained in both Medical and Surgical Jaundice. The degree of abnormality will then be significant. For instance, the value of serum alkaline phosphatase is often elevated in hepatitis due to the reduced function of "sick" parenchymal cells. However, it is usually much higher in obstructive jaundice; that is, above 15 Bodanski Units.

Presumptive Tests for Metabolic or Excretory Function of Parenchymal Cells.

1. Bromsulfalein Retention (BSP)
2. Hippuric acid excretion
3. Galactose tolerance and clearance
4. Bilirubin excretion
5. Level of plasma prothrombin and response to Vitamin K.
6. Total cholesterol and percentage of cholesterol esters
7. Abnormalities of proteins of plasma and serum
   a. Quantitative changes in concentrations of plasma fibrinogen, serum globulin, serum albumin, and cholinesterase.
   b. Qualitative changes in serum proteins - stability reactions of serum.
      1. Cephalin - Cholesterol flocculation.
      2. Thymol turbidity.
      3. Thymol flocculation.
      4. Collodial - red.
      5. Takata - Ara reaction.

Presumptive tests of obstructive disease or other disease of the biliary tract.

1. Alkaline phosphatase of serum.
2. "Negative" flocculation and turbidity tests
3. Total cholesterol
4. X-ray examination - introvenous cholangography

Examinations bearing on all groups of disease of the liver and biliary system.

1. X-ray of the gallbladder and gastro-intestinal tract.
2. Surgical procedures:
   a. Needle biopsy of the liver.
   b. Abdominal exploration
   c. Direct cholangography by injection into the duct at surgery.

Table No. I. presents in outline form the factors in the differential diagnosis of Jaundice.

Differential Diagnosis of Jaundice

The following table is presented in an attempt to record in outline form, the many points to be considered in the differential diagnosis of Medical and Surgical Jaundice.

TABLE I

	Surgical	Medical Hepatic	Medical Hemolytic
1. History:			
Onset with pain	+	—	—
Itching	+	—	—
Fever	—	+	(±)
Chills	+	+	+
Indigestion	+	+	—
Achclia	+	—	—
Choluria	+	+	—
Melena	—	+	—
Hematemesis	—	+	—
Hemorrhagic diathesis	—	+	—
Anemia	—	+	+
Malaria	—	—	+
Exposure to toxic agents	—	+	—
Transfusions	—	+	+
Immunizations	—	+	—
Alcoholism	—	+	—
Adequate diet	—	+	—
2. Physical Examination:			
Jaundice	+	+	+
Pallor	—	(±)	+
Abnormal nutritional state	(±)	+	—
Spider hemangiomata	—	+	—
Abnormal Spleen & liver	—	+	+
Fluid in chest or abdomen	—	+	—
Increased collateral circulation	—	+	—
Edema	—	+	—

+ or — indicates the relative importance of the presence or absence of the symptom or sign.

II. Tests used for detection and follow-up:

1. Urine bile or serum van den Bergh.
2. Urine urobilinogen. This is a very sensitive test.
3. Bromsulfalein excretion. This is a test which is rather safe in mild Jaundice, but is of no value in severe Jaundice.
4. Flocculation tests.

3 Prognosis and Severity:

1. Serum albumin
2. Cholinesterase activity
3. Prothrombin activity
4. Urinary urobilinogen
5. B. S. P. (In the absence of much Jaundice)

4. Laboratory:

	Normal Value	Surgical	Medical Hepatic	Medical Hemolytic
Routine Blood, Urine, Stool				
RBC	4.5 mi.	N	N or decr.	Decr.
Hbg	13-15 gms	N	N or decr.	Decr.
WBC	6-8000	N to incr.	N or decr.	N to incr.
Poly	60-70%	N to incr.	N or decr.	N to incr.
Lymph	30-40%	N to incr.	N or incr.	N to incr.
Platelets	100-300M	N	N	N
Seroolgy	Negative	?	?	?
Stool Inspection	Brown	N to light	Pasty	Dark
Stool Occult Blood	Negative	Negative	—or	Negative
Bilirubin Melatrolis (Screening Exam)				
Icterus (or serum bilirubin)	10U(I);0.8(B)	Incr.	Incr.	Incr.
Urinary bile (Spot test)	Negative	Pres.	Pres.	Negative
Special Tests				
1. Bilirubin Metabolism				
a. Serum Imin. bilirubin	0.2mg	50-80%	40-60%	N
Serum Total bilirubin	0.8mg	7 - 45	1 - 12	1 - 10
b. Urobilinogen in Urine 2 hr.	0.5 - 1.5	Abs. to sl.	0 - 3	5 - 60
c. Stool urobilinogen	350/100gm.	Absent	Slight	Increased
2. Presumptive tests for metabolic or excretory function of parenchyma				
a. BSP % retention	0	Of no value	Incr.	0)
b. Hippuric Acid Excretion	1 gm.	N	Decr.	N
c. Galactose Clearance	0	20mg	20mg	N
d. Bilirubin Excretion	0-5%	Decr.	Decr.	N
e. Level of Prothrombin	90-100%	N to decr.	Decr.	N
Response to Vit. K		Incr.	None	None
f. Total Cholesterol mg/100cc	120 - 300	Incr.	N to	N
g. Abnormalities of Bld. Port.				
1. Quantitative changes				
Albumin	5.0gm	N	Decr.	N
Globulins	2.0gm	N	Incr.	N
Fibrinogen	0.2-0.4gm	N	N to decr.	N
2. Qualitative changes				
Sterility reactions				
Cephalin Choles. Floc.	Negative	N	3 - 4	N
Thymal Turbidity, Units	3 - 4	N	10 - 40	N
Thymal Floc.	Negative	N	3 to 4	N
Colloidal Red		N	Incr.	N
Colloidal Gold		N	Incr.	N
Takata - Ora		N	Incr.	N
h. Cholinesteroso Activity Units of decrease of Ph per hr.	0.62 - 1.26	N	00.5	N
3. Presumptive tests for Obstruction				
a. Alkaline phosphatase (s)	1-4 B.U.	15 B. U.	15 B. U.	N
b. "Negative" Floc, tests		Present	Absent	Absent
c. Total cholesterol	120-300		N or	N
d. Drainage of Duod.	Bile	No bile	Bile	Bile
e. X-ray exma-intravenous cholongraphy		Obst.	---	---

Practical Differential Diagnosis of Medical and Surgical Jaundice

The following table presents in outline form tests that can be used, from the practical standpoint, in the differential diagnosis of Medical and Surgical Jaundice. These are tests which are readily available, and in a great majority of the cases, will be of great help in making a diagnosis.

TABLE 2

	Medical	Surgical
WBC	Dec.(lymph. up)	Usually up-infect
Floc. Tests	Positive	Negative
Choline Esterase	Decrease	Normal
Albumin	Decrease	Normal
Prothrombin	Decrease	Normal
Alk. Phos.	Less than 15 B. U.	More than 15 B. U.

Of interest are the following comments:

1. BSP excretion is of no value in a Jaundiced patient.
2. Bilirubin (van den Bergh) does not differentiate between Medical and Surgical Jaundice. It is of value only in the differential between hemolytic and other types of Jaundice.
3. Serum cholesteral and per cent of cholesteral esters are effected by other conditions than bilirubin metabolism. Therefore, they are not nearly as accurate as the level of the serum alkaline phosphatase.

Summary

1. A brief review of the physiology of the liver with related physical signs and laboratory tests is presented.

2. The problem of the differential diagnosis of Medical and Surgical Jaundice is discussed.

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Clinical Notes From Grand Rounds

These notes are abstracts of opinions expressed by staff members during case presentations at the Friday Grand Rounds of the Pratt Diagnostic Clinic — New England Center Hospital.

Dextran has proved of limited value in the treatment of nephrotic states because of its sodium content. A nine per cent, sodium-free preparation of dextran is now being tried with some apparent success. It must be remembered, however, that this substance accumulates in the body and must be used with some caution, because occasionally it has apparently induced hemorrhage.

The Use of 'Ilotycin' (Continued from Page 97)

TABLE 1. — VARIOUS DERMATOSES TREATED WITH RESULTS OF TREATMENT

Disease	Total No. Cases	Oral and Local Therapy	Oral Therapy	Local Therapy	Excellent Results	Good Results	Partial Improvement	No Improvement	Smallest Total Dose, GM.	Largest Total Dose, GM.
Pyoderma	9	8	---	1	8	1	---	---	5.6	9.8
Eczema, Infected	8	5	---	3	---	1	7	---	5.6	12.6
Folliculitis	6	4	---	2	---	3	3	---	8.2	12.0
Epidermophytosis, Infected	3	2	---	1	1	1	1	---	4.2	12.6
Cellulitis	2	2	---	---	2	---	---	---	8.4	12.6
Psoriasis	3	---	2	1	---	---	---	3	10.8	14.0
Acne Conglobata	1	1	---	---	---	---	1	---	30.0	---

received both oral and local therapy; two patients received the drug by mouth and eight patients received only local therapy.

The drug was of definite value in those conditions in which pyogenic organisms were the main cause of the disease.

In conditions such as infected eczema and infected epidermophytosis, the administration of the drug was of value in clearing up the secondary infection, however, it had little effect on the underlying primary dermatosis.

No gastro-intestinal upsets resulted from treatment and monilial eruptions did not occur as a complication of treatment.

Local irritation was not observed from the ointment used.

No blood dyscrasias or evidence of renal damage were noted in our series.

Acknowledgment

The photographs were made by Mr. Lester Heitlinger, Chief, Medical Illustration Laboratory, Veterans Administration Hospital, Tucson, Arizona.

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Post-Graduate Cardiac Session Scheduled in El Paso March 3

Program for the General Medicine and Cardiology session of the El Paso branch of the University of Texas Postgraduate School of Medicine, to be held in the El Paso County Medical Society's Turner home at 1301 Montana Street in El Paso on March 3, has been announced by Dr. Ralph H. Homan of El Paso, dean of the El Paso branch.

Dr. Saul B. Appel, El Paso, "Ballistocardiography in its Simplest Forms and Interpretation"; Dr. J. A. Bernard, El Paso, "The Newer Diuretics"; Dr. Arthur Ruskin, Associate Professor of Medicine at the University of Texas Medical Branch at Galveston, "Newer Advances in Coronary Artery Diseases"; Dr. Edward Egbert, El Paso, "The Newer Vasodilators, Classifications, Indications, Actions and Value"; Dr. Ross W. Rissler, El Paso, "Some Basic Concepts Regarding Recent Steroid Hormone Studies"; Dr. Ruskin, "Newer Advances in Hypertensive Therapy"; Dr. F. C. Golding, El Paso, "Virus Infections"; Dr. E. S. Crossett, El Paso, "Cardiac Catherization and its Indications."

The meeting will start at 8:30 a. m. and close at 4:10 p. m.

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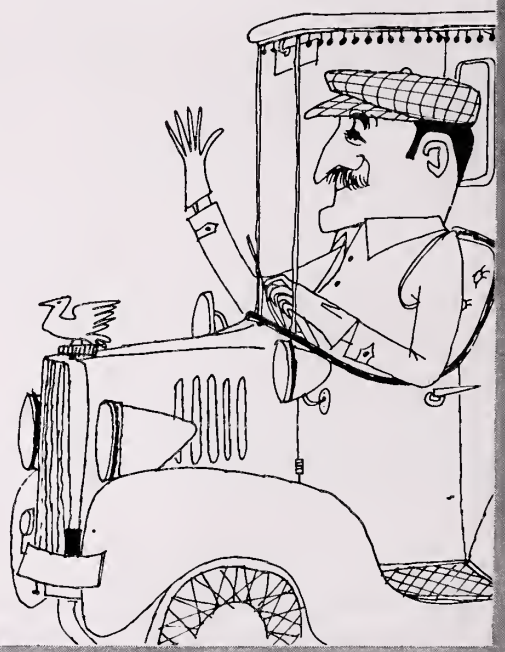
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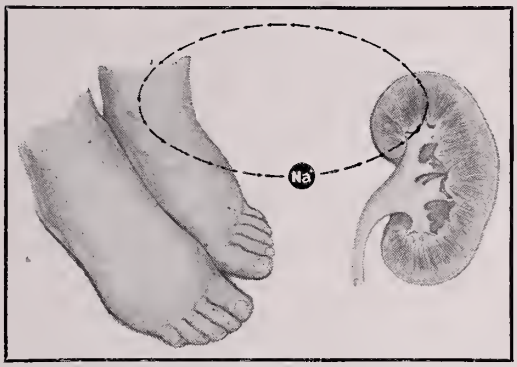
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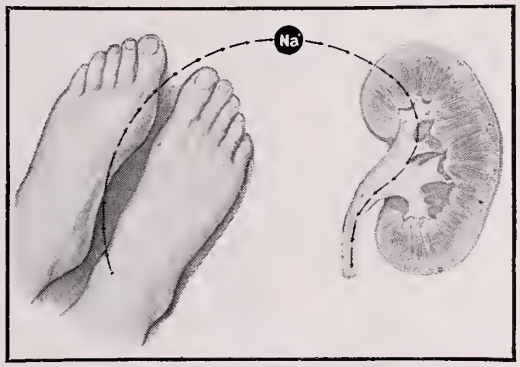
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An effective diuretic has been described as one which causes excretion of water, sodium and chloride in amounts sufficient to reduce the edema but not to result in salt depletion.

Mictine (brand of aminometradine), introduces to clinical practice an *improved* diuretic which not only meets the standard qualifications but has these seven additional advantages:

Mictine is orally effective; it is not a mercurial; it has no known contraindications; it does not upset the acid-base balance; it exerts no significant influence on electrolyte balance; it may be given in the presence of renal or hepatic diseases; it is well tolerated.

As with most effective therapeutic agents, in high dosage Mictine may cause some side effects in some patients; however, on three tablets daily side effects (anorexia and nausea, rarely vomiting, diarrhea or headache) are minimal or absent.

Clinically, Mictine is useful in the maintenance of an edema-free state in all patients and for initial and continuing diuresis in mild or moderate congestive failure. It is not intended for initial diuresis in severe congestive failure unless either sensitivity or tolerance to other diuretics has developed in the patient.

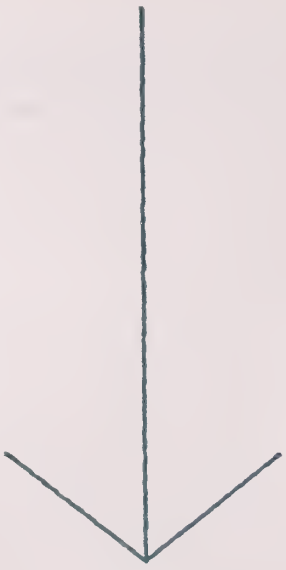
The maintenance dosage of Mictine, as well as for initial diuresis in mild or moderate congestive heart failure, is one to four 200-mg. tablets daily in divided doses; the dosage for initial diuresis in severe congestive failure, under the conditions already described, is four to six tablets daily. For either use, it is recommended that Mictine be prescribed with meals on interrupted dosage schedules; that is, prescribing Mictine on alternate days or for three consecutive days and omitting it the next four days.

*Trademark of G. D. Searle & Co.

Descriptive literature and clinical trial packages are available on request to . . .

SEARLE

P. O. Box 5110 C-21
Chicago 80, Illinois



for

specific

Cough

suppressant

effect

Ten milligrams of Romilar equal

fifteen milligrams of codeine.

Yet Romilar is non-narcotic -

does not cause nausea, constipation,

drowsiness, or addiction.

Tablets; Syrup; Expectorant (with

Ammonium Hydrochloride).

Romilar® Hydrobromide - brand of dextromethorphan hydrobromide

Roche Original Research in Medicine and Chemistry

Gentle is the word for Noludar

Mild, yet positive in action, Noludar 'Roche' is especially suited for the tense patient who needs to relax and remain clear-headed —or for the insomniac who wants a refreshing night's sleep without hangover. Not a barbiturate, not habit-forming. Tablets, 50 and 200 mg; elixir, 50 mg per teasp.



Noludar® brand of methyprylon
(3,3-diethyl-5-methyl-
2,4-piperidinedione)

ROCHE

Original Research in
Medicine and Chemistry



Don't overstimulate the depressed patient . . .



CREATE A HAPPY MEDIUM
with NEW

Ritalin®

. . . a mild cortical stimulant which gently lifts the patient out of fatigue and depression without swings of reaction caused by most stimulants. Ritalin counteracts the oversedation of barbiturates, chlorpromazine, rauwolfia, antihistamines . . . yet has no appreciable effect on blood pressure, pulse rate or appetite.

Supplied: Tablets, 5 mg. (yellow), 10 mg. (blue) and 20 mg. (peach-colored).

Dosage: 5 to 20 mg. b.i.d. or t.i.d., adjusted to the individual.

RITALIN® hydrochloride (methylphenidylacetate hydrochloride CIBA)

2/2245M

CIBA
SUMMIT, N.J.

NEW ANABOLIC HORMONE FORMULATION

DELADUMONE

(combination of Squibb Testosterone Enanthate, Squibb Estradiol Valerate)

a single injection every 2 to 4 weeks provides an enhanced therapeutic potential for

- imparting a sense of well-being in the menopausal syndrome (with minimal likelihood of unwanted estrogenic or androgenic effects)
- correcting depletion of protein and osseous tissues in the menopausal sequelae and osteoporosis in males and females.

Supplied in vials of 1 and 5 ml.; each ml. containing 90 mg. of testosterone enanthate and 4 mg. of estradiol valerate.

Also available: DELESTROGEN (Squibb Estradiol Valerate) for timed action that ideally matches the estrogenic phase of the normal menstrual cycle. Vials of 1 and 5 ml., each ml. containing 10 mg. estradiol valerate.

DELATESTRYL (Squibb Testosterone Enanthate) depot preparation for prolonged anabolic and androgenic effects. Vials of 1 and 5 ml., each ml. containing 200 mg. testosterone enanthate.

'DELADUMONE' 'DELESTROGEN' 'DELATESTRYL'® ARE SQUIBB TRADEMARKS

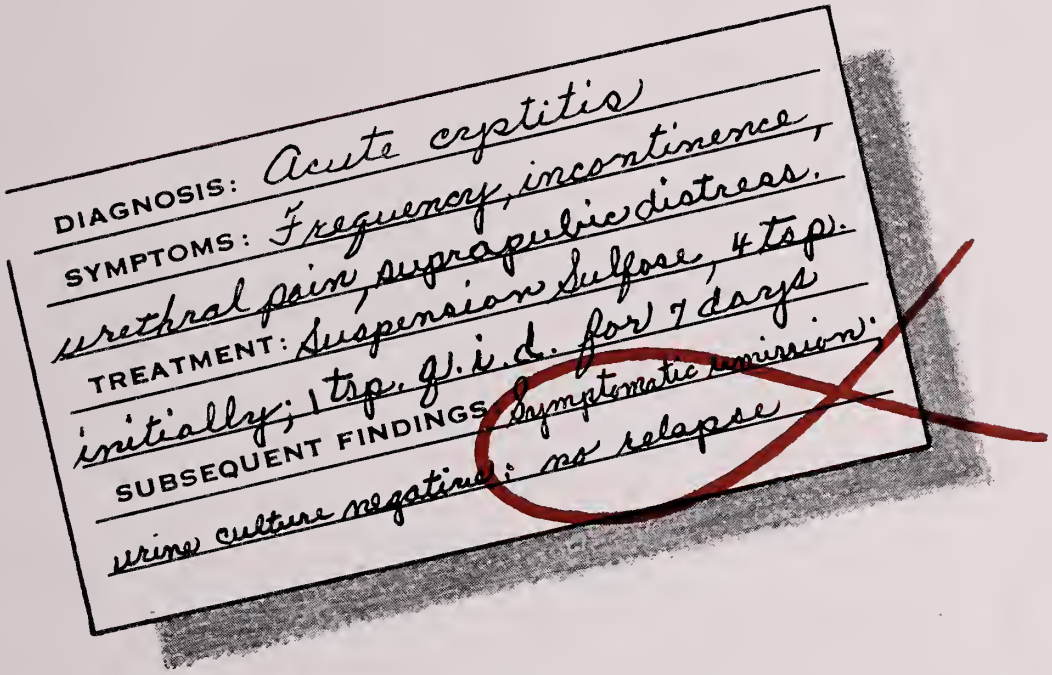
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In Urinary-Tract Infection . . .

the *Test*

of Effective Therapy

". . . there were no relapses in those freed of the initial urinary infection. . . ."[1]



Post-treatment recurrence is common in urinary-tract infection.

With Suspension SULFOSE, however, Bohne and Chase[1] report no recurrence: ". . . no patient returned for additional treatment . . . 79% were freed of urinary infection. . . ." Infection *controlled*, relapse *prevented*—this is the test of effective therapy.

Suspension SULFOSE offers the advantages of three potentiating sulfonamides in an *alumina-gel base*. Supported by comparative studies, it is a combination for higher and more prolonged blood levels[2] and maximal renal safety.[2,3]

Wyeth®
Philadelphia 1, Pa.

Supplied: Suspension SULFOSE, bottles of 1 pint. Also available, Tablets SULFOSE, bottles of 100 and 1000. Each 5-cc. teaspoonful and tablet contains 0.167 Gm. each of sulfadiazine, sulfamerazine, and sulfamethazine.

1. Bohne, A.W., and Chase, W.E.: Am. J.M. Sc. March, 1956. 2. Berkowitz, D.: Antibiot. & Chemo. *3*:618 (June) 1953. 3. Editorial: J.A.M.A. *159*:1459 (Dec. 10) 1955.

suspension

SULFOSE®

Triple Sulfonamides (Sulfadiazine, Sulfamerazine, Sulfamethazine)



SIGNIFICANT NUTRITIONAL SUPPORT

FOR THE "OVER FORTY"

WITH GERI-DEIMAL,

Geri-Deimal offers the per diem nutritional support so often essential to the well-being of the ageing or convalescent patient.

Two easy-to-swallow, capsule-shaped tablets provide:

Vitamin B_{12} with Intrinsic Factor USP	1/10	Oral Unit
Vitamin B_{12} (activity concentrate)	2.0	mcg.
Vitamin B_1 (Mononitrate)	6.0	mg.
Vitamin B_2 (Riboflavin)	6.0	mg.
Vitamin B_6 (Pyridoxine HCl)	0.5	mg.
Calcium Pantothenate	5.0	mg.
Niacinamide	100.0	mg.
Folic Acid	0.34	mg.
Biotin	10.0	mcg.
Vitamin A (Acetate)	6,000	USP
Vitamin D (Irradiated Ergosterol)	600	USP
Vitamin E (d-alpha Tocopherol Acetate)	5.0	mg.
Vitamin K (Menadione)	1.0	mg.
Vitamin C (Ascorbic Acid)	75.0	mg.
Hesperidin Complex	25.0	mg.
Choline Bitartrate	200.0	mg.
Inositol	25.0	mg.
Betaine Hydrochloride	100.0	mg.
Pancreatin	97.2	mg.
Pepsin	97.2	mg.
Bile Acids, Mixed Oxidized	25.0	mg.
Calcium (Purified Bone Meal)	112.0	mg.
Iron (Ferrous Sulfate, Dried)	20.0	mg.
Copper (Sulfate)	0.67	mg.
Iodine (Potassium Iodide)	0.15	mg.
Manganese (Sulfate)	2.0	mg.
Potassium (Chloride)	10.0	mg.
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Zinc (Sulfate)	1.5	mg.
Molybdenum (Sodium Molybdate)	0.1	mg.

Therapeutic
vitamin-mineral balance

THERA-DEIMAL

ONE TABLET DAILY provides higher potencies in balance to meet nutritional needs intensified by illness. Slow disintegration assures greater tolerance and assimilation by patient.

At all pharmacies in bottles of 30 and 100.
Low daily cost for patient.

Maintenance
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DEIMAL

ONE TABLET DAILY offers per diem nutritional supplement at low daily cost. Capsule-shaped tablet is easy to swallow...offers greater tolerance and assimilation.

In bottles of 100 at all pharmacies.

BOYLE

BOYLE & COMPANY · Bell Gardens, California

A "sense of well-being" is an added benefit in "Premarin" therapy



Every woman who suffers in the menopause deserves "Premarin," widely used natural, oral estrogen.

"Premarin" produces prompt symptomatic relief and a gratifying "sense of well-being." "Premarin" presents the complete equine estrogen-complex. Has no odor, imparts no odor.

"PREMARIN"®
Conjugated estrogens (equine)

in the menopause and the pre- and postmenopausal syndrome

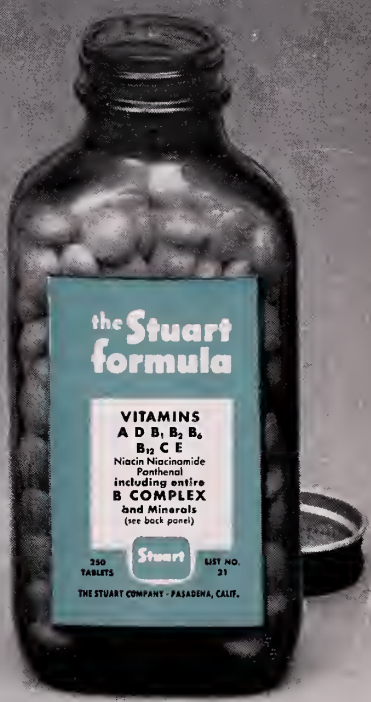
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The multivitamin product your patients can afford to keep on taking



Constantly improved . . .
to meet latest standards

A balanced multivitamin formula including natural B Complex factors and minerals



Available in pleasant tasting liquid or small white tablets
Liquid: pints . . . Tablets: bottles of 100 and 250

because
your allergic patients
need a lift
a new Rx . . .



Plimasin®

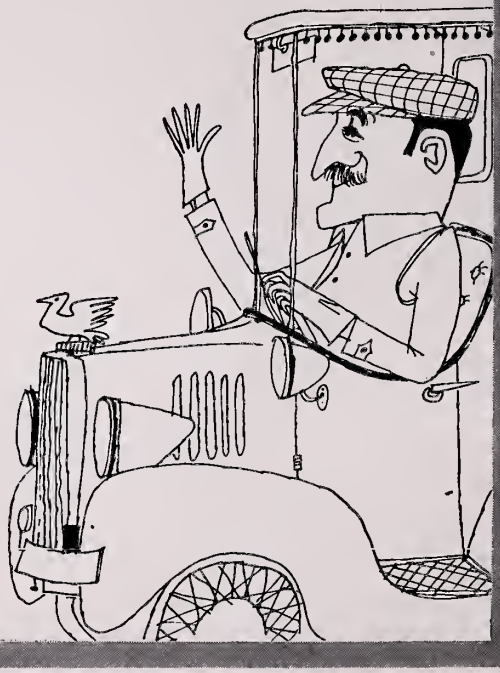
(tripelennamine hydrochloride and methyl-phenidylacetate CIBA)

new, mild stimulant
and antihistamine

boost their spirits . . . relieve their allergic symptoms

So often the allergic patient is tired, irritable, depressed—mentally and physically debilitated. Frequently, antihistaminic agents themselves are sedative, adding to this already fatigued and disconsolate state.

Plimasin, because it combines a proved antihistamine with a new, mild psychomotor stimulant, overcomes depression and fatigue while it achieves *potent* antiallergic effects. Its new stimulant component —Ritalin—is totally different from amphetamine: smoother, gentler in action, devoid of pressor effect.

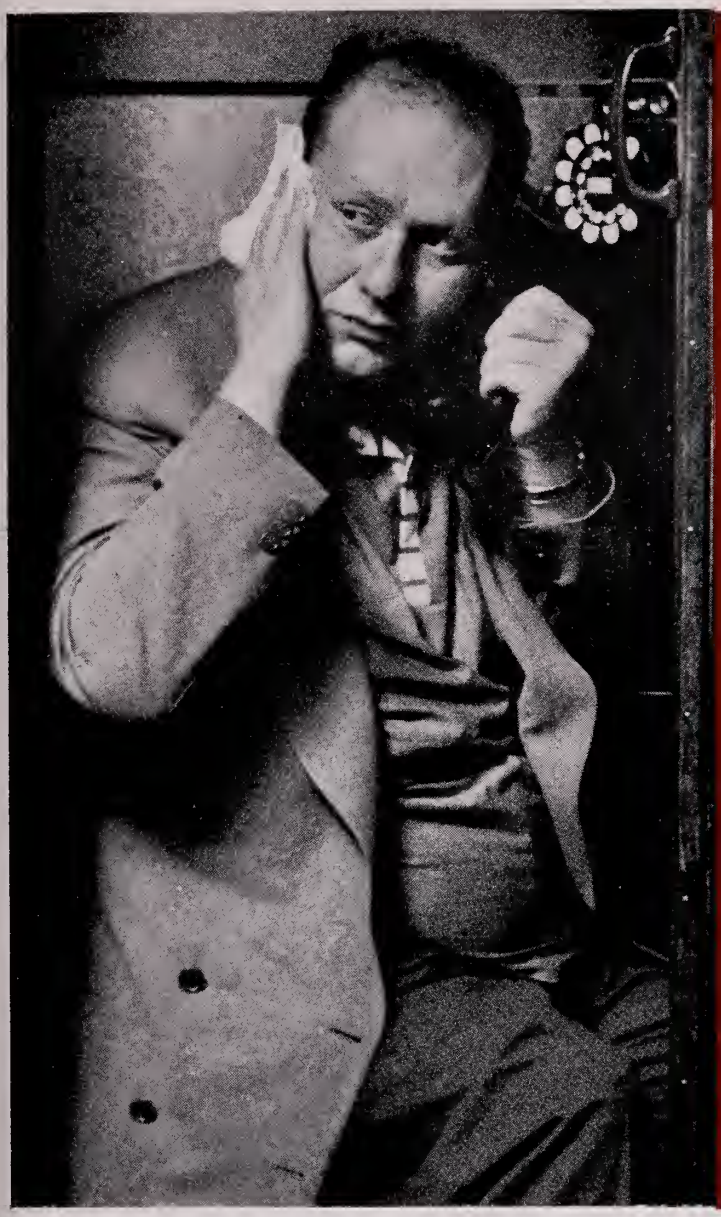


DOSAGE: *One or 2 tablets as required.*

Each Plimasin tablet contains 25 mg. Pyribenzamine® hydrochloride (tripelennamine hydrochloride CIBA) and 5.0 mg. Ritalin® (methyl-phenidylacetate CIBA).

C I B A SUMMIT, N. J.

2/2191M



It's not a distress call... not yet... but it could be— For effective appetite suppression in obesity...

AMBAR™ Robins

METHAMPHETAMINE AND PHENOBARBITAL

TABLETS AND EXTENTABS*

The "distress call" in obesity often comes from the emotional "misfit," unable to control mood or appetite. Ambar allays this hunger sensation by *gently* lifting the depressed mood, and *subtly* reducing the emotional distresses so often responsible for the urge to overeat. Ambar brings the obese patient's appetite "down to normal"...

...without peaks of stimulation
...without troughs of depression
...without significant cardiovascular effects
...without postmedication "jitters"

AMBAR™ TABLETS

Methamphetamine Hydrochloride . . 3.33 mg.
Phenobarbital (1/3 gr.) . . . . . 21.6 mg.

Average duration of therapeutic effects 4 hours

AMBAR™ EXTENTABS®

Methamphetamine Hydrochloride . . 10.0 mg.
Phenobarbital (1 gr.) . . . . . 64.8 mg.

Average duration of therapeutic effects 10-12 hours

•

Literature available on request.

*Robins' registered trade-mark for Extended Action tablets.

A. H. ROBINS COMPANY, INC., RICHMOND, VIRGINIA

Ethical Pharmaceuticals of Merit Since 1878

Upjohn

Relax

the nervous,
tense,
emotionally unstable:

Reserpoid *(Pure crystalline alkaloid)*

TRADEMARK FOR THE UPJOHN BRAND OF RESERPINE

Each tablet contains:
Reserpine . . . . . 0.1 mg.
or 0.25 mg.
or 1.0 mg.
or 4.0 mg.

The elixir contains:
Reserpine . . . . . 0.25 mg.
per 5 cc. teaspoonful

Supplied:
Scored tablets
0.1 and 0.25 mg. in bottles of 100 and 500
1.0 and 4.0 mg. in bottles of 100
Elixir in pint bottles

The Upjohn Company, Kalamazoo, Michigan



ACHROMYCIN liquid pediatric drops | now in handy, plastic dropper-bottle

Accurate dosage made easier
Daily dosage easy too:
one drop per pound body weight
Same popular cherry flavor



A new unbreakable dropper-bottle makes it easier for mothers to accurately dispense ACHROMYCIN* Tetracycline Liquid Pediatric Drops. As a result, you can prescribe with greater confidence that your exact regimen will be followed. You can be certain, also, that even the tiniest tot will take to the cherry flavor of this product. The drops can be squeezed directly onto the child's tongue, or mixed with milk, fruit juice, or other liquids. Potency: 100 mg. per cc. (20 drops).

Of course, this is just one of the many dosage forms of ACHROMYCIN prepared for your convenience. From 21 types, you can choose the one best suited to the patient's needs. Each provides true broad-spectrum activity, and prompt control of infection with negligible side effects.



A WIDELY USED form of tetracycline is ACHROMYCIN Capsules—the only dry-filled, sealed capsules on the market. Advantage: rapid and complete absorption, tamperproof contents. Available in potencies of 50, 100, and 250 mg.



MINOR INFECTIONS of the mouth and throat can often be controlled with ACHROMYCIN PHARYNGETS* Troches alone. (In severe infections, a systemic form of ACHROMYCIN should also be used.) Each cherry-flavored PHARYNGETS Troche supplies 15 mg. of Lederle's tetracycline.



The Lederle representative or your local pharmacist will gladly tell you about the many other ACHROMYCIN *dosage forms.*

Lederle

*REG. U.S. PAT. OFF.

LEDERLE LABORATORIES DIVISION *AMERICAN CYANAMID COMPANY* PEARL RIVER, NEW YORK



*Verse by
RICHARD ARMOUR
Illustrations by
LEO HERSHFIELD

IGNORANCE ISN'T BLISS*

There is an awful, quite unlawful,
Violent and dread ache
That should have fame and Latin name
And yet is called "a headache."

The victim thinks his head's in kinks,
Or, from the inner clamor,
Some hidden sprite with all his might
Is banging with a hammer.

He seems to feel that rods of steel
Are thrusting through his cranium.
In state so vile, he couldn't smile
To hear he'd struck uranium.



Poor soul is he who hopelessly
Is sick as hell with migraine
(And pity, too, this person who
Must not have heard of Wigraine.)

WIGRAINE®

A fast-acting, complete treatment for the migraine attack, Wigraine tablets each contain 1.0 mg. ergotamine tartrate and 100.0 mg. caffeine to abort head pain; 0.1 mg. belladonna alkaloids to alleviate nausea and vomiting; and 130.0 mg. acetophenetidin to relieve residual occipital muscle pain. The tablets disintegrate in seconds, and are available foil-stripped in boxes of 20.

Organon INC. • ORANGE, N. J.

FOR YOUR PATIENTS WITH

Fat intolerance dyspepsia
Irritable bowel syndrome
Gallbladder dysfunction

OXSORBIL Capsules will permit the inclusion of suitable dairy and vegetable fats in the patient's diet.

POLYSORBATE 80 MAKES THE DIFFERENCE

This well balanced choleretic, cholagogic formula comes in two forms.

OXSORBIL® P.B. (contains phenobarbital and belladonna for patients also requiring spasmolysis and sedation)

OXSORBIL® *Plain*

Bottles of 100 capsules
Literature on request

IVES-CAMERON COMPANY
Philadelphia 2, Pa.

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because your allergic patients need a lift . . .

a new ℞ **Plimasin®**

(tripelennamine hydrochloride and methyl-phenidylacetate CIBA)

mild stimulant and antihistamine



boost their spirits . . .
relieve their allergic symptoms

Each Plimasin tablet contains 25 mg. Pyribenzamine® hydrochloride (tripelennamine hydrochloride CIBA) and 5.0 mg. Ritalin® (methyl-phenidylacetate CIBA).

Dosage: *One or 2 tablets as required.*

CIBA
SUMMIT, N. J.

2/2244M



a "judicious combination..."

for antiarthritic therapy

SALCORT*

That cortisone and the salicylates have a complementary action has been well established.[1-5] In rheumatic conditions, functional improvement and a sense of feeling well are noted early. No withdrawal reactions have been reported.

One clinician states: "By a judicious combination of the two agents . . . it has been possible to bring about a much more favorable reaction in arthritis than with either alone. Salicylate potentiates the greatly reduced amount of cortisone present so that its full effect is brought out without evoking undesirable side reactions."[1]

INDICATIONS:

Rheumatoid arthritis . . . Rheumatoid spondylitis . . . Rheumatic fever . . . Bursitis . . . Still's disease . . . Neuromuscular affections

EACH TABLET CONTAINS:

Cortisone acetate	2.5 mg.
Sodium salicylate	0.3 Gm.
Aluminum hydroxide gel, dried	0.12 Gm.
Calcium ascorbate	60 mg.
(equivalent to 50 mg. ascorbic acid)	
Calcium carbonate	60 mg.

* U.S. Pat. 2,691,662

1. Busse, E.A.: Treatment of Rheumatoid Arthritis by a Combination of Cortisone and Salicylates. Clinical Med. 11:1105 (Nov., 1955).
2. Roskam, J., VanCawenberge, H.: Abst. in J.A.M.A., 151:248 (1953).
3. Coventry, M.D.: Proc. Staff Meet., Mayo Clinic, 29:60 (1954).
4. Holt, K.S., et al.: Lancet, 2:1144 (1954).
5. Spies, T.D., et al.: J.A.M.A., 159:645 (Oct. 15, 1955).

BRISTOL, TENNESSEE

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The S. E. Massengill company

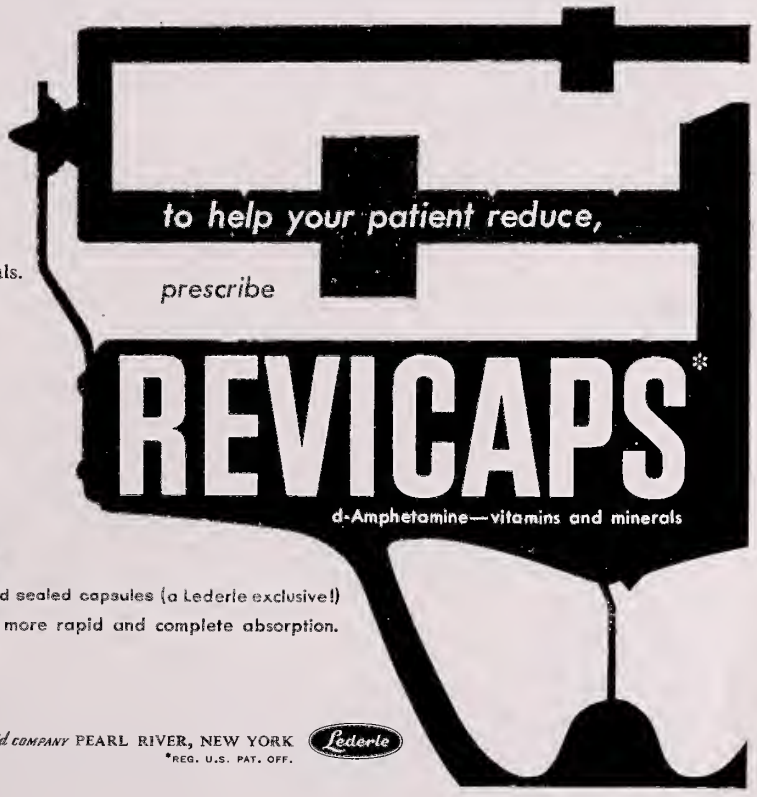


A complete, well-designed formula supplying: d-Amphetamine, to depress appetite and elevate mood; methylcellulose, to provide bulk; 21 vitamins and minerals, to supplement the limited diet.
Available on prescription only.

Dosage: 1 or 2 capsules ½ to 1 hour before meals.

Each capsule contains:

d-Amphetamine Sulfate	5 mg.
Vitamin A	1670 U.S.P. Units
Vitamin D	167 U.S.P. Units
Thiamine Mononitrate (B_1)	1 mg.
Riboflavin (B_2)	1 mg.
Niacinamide	20 mg.
Calcium Pantothenate	0.34 mg.
Pyridoxine HCl (B_6)	0.34 mg.
Folic Acid	0.34 mg.
Vitamin B_{12}	0.34 mcgm.
Ascorbic Acid (C)	20 mg.
Methylcellulose	200 mg.
Iron ($FeSO_4$ exsiccated)	3.34 mg.
Calcium ($CaHPO_4$)	140 mg.
Phosphorus ($CaHPO_4$)	108 mg.
Iodine (KI)	0.5 mg.
Fluorine (CaF_2)	0.1 mg.
Copper (CuO)	1 mg.
Potassium (K_2SO_4)	5 mg.
Manganese (MnO_2)	1 mg.
Zinc (ZnO)	0.5 mg.
Magnesium (MgO)	1 mg.
Boron ($Na_2B_4O_7$)	0.1 mg.



LEDERLE LABORATORIES DIVISION AMERICAN Cyanamid COMPANY PEARL RIVER, NEW YORK
*REG. U.S. PAT. OFF.
Lederle

Wine... a Nutrient Beverage

for the Convalescent and the Aging Patient

IN A NEW and engaging book, the history of the medical uses of wine has been traced in scholarly fashion from biblical times to the present.*

It is clear that some of the virtues formerly ascribed to wine have been based on tradition or empiricism, but many can now be supported by modern and well-controlled research.**

Wine—to Stimulate Appetite, Aid Digestion—We know now why wine plays such a valuable role as a stimulant to appetite in the anorexia of old age or convalescence. Two to three ounces of dry table wine have been found to markedly increase olfactory acuity.

Moreover, wine aids digestion by increasing not only the volume but the proteolytic power of gastric juice.

Wine—to Overcome Insomnia, Combat Hypochromic Anemia—A small amount of Port or Sherry taken at bedtime is gently sedative and sleep-producing—frequently obviating the need for medication.

Hematopoietic substances in natural wines can aid in combating the hypochromic anemia so often present in both the aged and the convalescent.

Add 'Elegance' and Taste-Appeal to the Sick-Tray—There's anticipated delight when the patient sees an appetizing, colorful glass of wine on the table or tray—wine adds that touch of 'elegance' which gives a psychological lift at a time it is most needed—when meals might otherwise look dull and uninviting.

The Flavorsome Fine Wines of California—The fine wines of California are delicious, and the variety is so wide that a wine can be found to suit each taste.

Here in the land of rich soils and sunshine, each grape variety comes to perfect ripeness under ideal conditions—and the high quality standards of California wines are controlled by modern scientific methods. There's Port, Sherry, Muscatel, Burgundy, Sauterne, Zinfandel, Rhine Wine, all at reasonable prices. Wine Advisory Board, 717 Market Street, San Francisco 3, California.

*Lucia, S. P.: Wine as Food and Medicine, New York, The Blakiston Company, Inc., 1954.

**Research information on wine is available upon request.



and Theragran gives
therapeutic results

THERAGRAN

THERAPEUTIC FORMULA VITAMIN CAPSULES SQUIBB

Each Theragran Capsule supplies:

Vitamin A (synthetic)	25,000 U.S.P. Units
Vitamin D	1,000 U.S.P. Units
Thiamine Mononitrate	10 mg.
Riboflavin	10 mg.
Niacinamide	150 mg.
Ascorbic Acid	150 mg.

1 or more capsules daily
bottles of 30, 100 and 1000.

SQUIBB

"THERAGRAN" IS A SQUIBB TRADEMARK

SOUTHWESTERN MEDICINE

The U. S. - Mexico Regional Medical Journal serving West Texas, New Mexico, Arizona and Northern Mexico

Official Journal of

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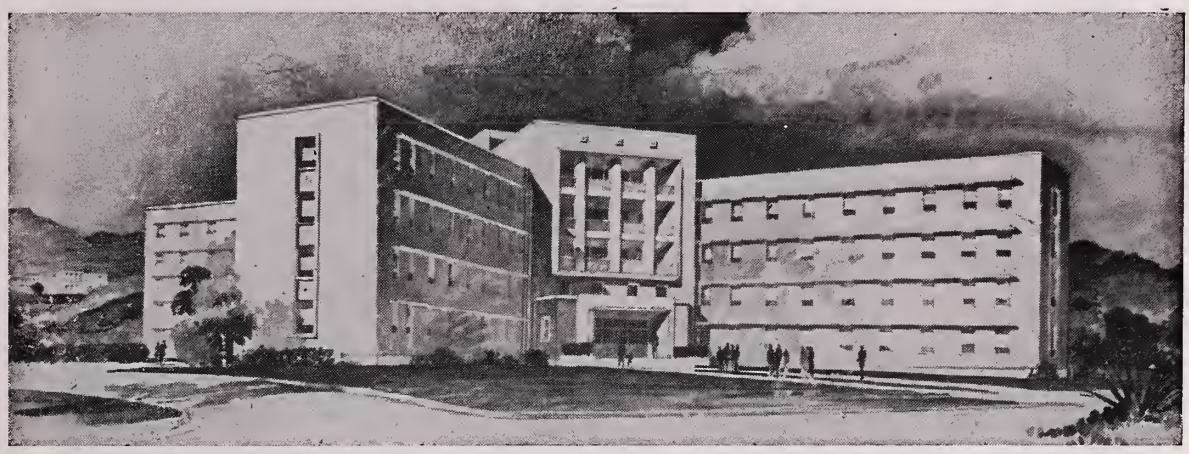
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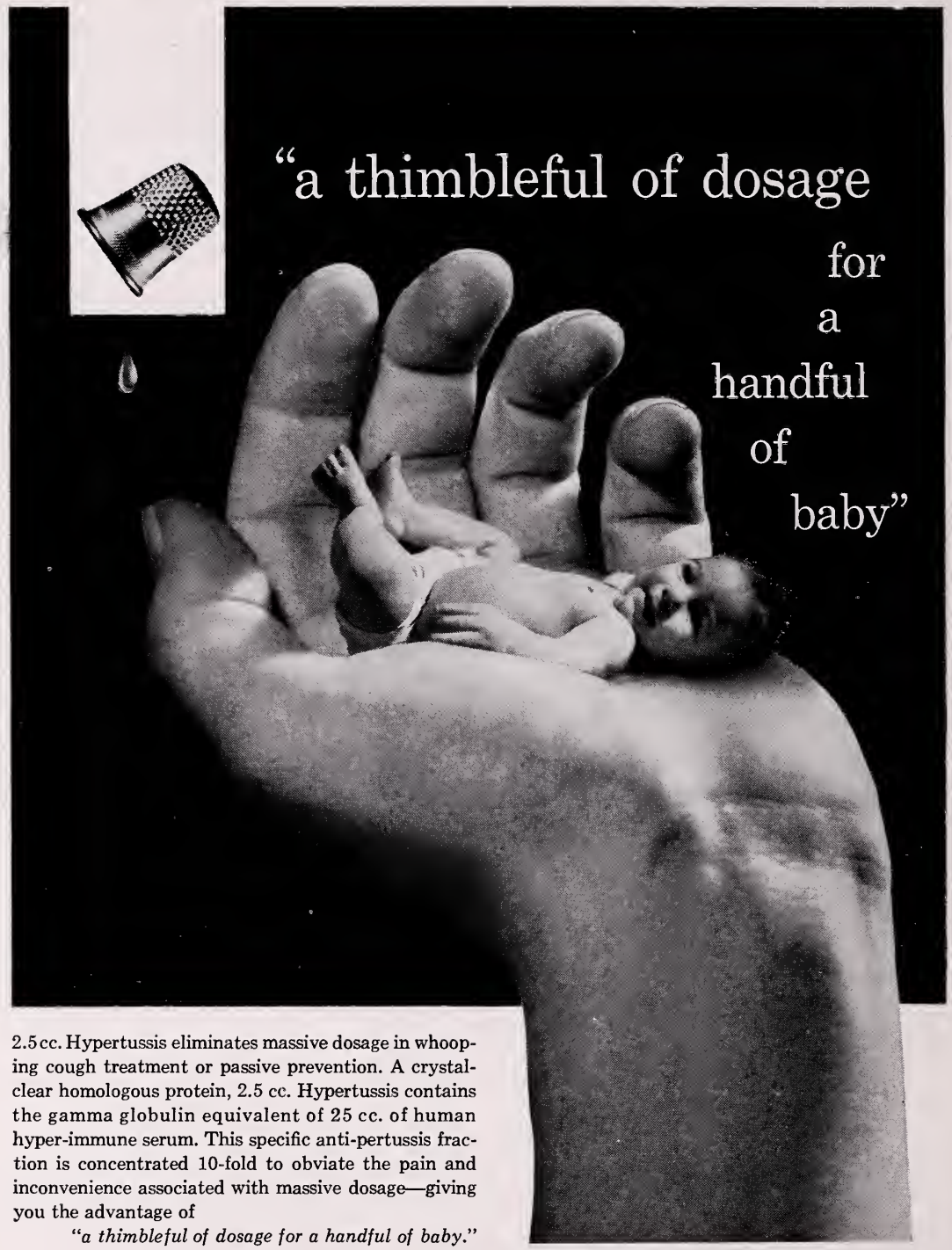
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Southwestern MEDICINE

VOL. XXXVII MARCH, 1956 No. 3

Symposium on Headache*

Introductory Remarks and Differential Diagnosis

By Derek Denny-Brown, M. D., Neurologist-in-Chief, Boston City Hospital; Professor of Neurology, Harvard Medical School

Headache is something that all of us must have experienced at one time or another, and therefore is of general interest. Whether a headache can be attributed directly to our behavior (a "hang-over"), or whether it is a reaction to some stress or disease within us, it is a most distressing symptom. Even in its mildest form it has a high "nuisance value."

As a medical problem headache presents obvious difficulties in investigation. It is a subjective sensation. The investigator cannot measure it directly. In this connection we must acknowledge the important pioneering work of Dr. Wolff of New York, who with his associates has devised most ingenious methods of making comparative measurements of head pain, and of the pulsations of blood vessels of the scalp. In this way, valuable data on headache mechanisms have been collected. Headache, however, has many aspects and in this symposium we are bringing together several different points of view from the more purely clinical aspect of the problem.

SOUTHWESTERN MEDICINE is honored at the opportunity to publish this important and distinguished symposium on "Headache" prepared by the Tufts-New England Medical Center and written by leading specialists in the field. We believe that physicians of the Southwest will find this symposium of the highest interest. — THE EDITORS.

Numerous Kinds

First, however, it should be emphasized that there are a number of different kinds of headache, even of common mild recurrent headaches, and that sometimes, especially when it becomes progressively worse and is associated with vomiting and increasing dimness of vision, headache may indicate very serious disease. But most people are concerned about the kind of headache that comes at intervals in otherwise good health, and may recur for years without any obvious disease. Migraine headache is a common such variety.

Migraine and megrim are very old words derived from the "hemicrania" of the ancients. To many it is known as sick-headache or bilious headache. For the neurologist the "classical migraine" has the greatest interest, for it is the variety in which an aura or premonitory symptom opens the scene. The aura takes the form of an expanding, star-shaped hallucination in the field of vision, or numbness in the mouth or hand, lasting five or ten minutes and pointing to a one-sided disturbance of the parieto-occipital region of the brain. It is always a sensory disturbance. This indicates a very particular liability of the blood vessels of the parietal lobe. These same vessels are those most often affected by anoxia of high altitude type. It is also no coincidence that these blood vessels of the parietal region are reported to be more responsive than other small cerebral vessels to stimulation of the sympathetic nervous system, although sympathectomy does not abolish migraine.

Brain Storm

The brain storm of classical migraine is a self-limited affair that terminates in a few hours, practically invariably ended by sleep. In a susceptible individual it may be set up by any prolonged stress—long hours of work, anxiety or insomnia. But if in this way it is a weak point in a person's makeup, how is it that at another time the same headache may strike him when he is relaxed and enjoying himself? Why does he have this particular liability and how can he abolish it?

Most people are liable to recurrent headaches that are less clear-cut and less dramatic than classical migraine. These appear gradually and without a preliminary warning, may be present on awakening, and may last two or more days. The same throbbing cranial vasodilation that is associated with classical migraine, the same intolerance of rise of venous pressure, occurs with these "migrainous headaches." Their very persistence may lead to more exhaustion and prostration than the stress that caused them. Prostration becomes the leading symptom, and is clearly traceable to mental anxiety. Such headaches pose difficult problems for the physician because the factors originally leading to the bouts of the headache become inextricably confused with anxiety about the headache itself and the inconvenience it has caused. These are often called tension headaches and will be discussed by Dr. John Graham.

*This symposium published by permission of the Tufts-New England Medical Center Bulletin.

Nervous Stress

In other patients nervous stress or anxiety are linked with more general discomfort in the head, such as pressure or bursting sensations. Such sensations commonly accompany nervous depression. How does this happen? Headache cannot be produced by sheer effort of imagination. Some have suggested that the muscles of the neck or the eyes are too tense, but that is surely not the whole explanation, for the pain and tenderness are referred directly to the scalp and even a hairbrush causes discomfort. In traumatic headache, although the tender area is usually an old scar in the scalp, it is remarkable how many factors such as an injection of histamine or simple anxiety can precipitate a characteristic headache. How is the scalp sensitized?

Studies on the effect of various pharmacologic substances on the blood flow in the scalp and brain have given a great deal of information. Dr. Arnold Friedman, a former associate of mine, has made statistical studies of the effects of all the modern remedies on a great variety of types of head pain. He will discuss the use of various substances in treatment on the basis of his experience at the Headache Clinic, Montefiore Hospital, New York.

If headache is always felt in one particular place in the head, it obviously is likely that some abnormality underlies that place. It may not be serious (perhaps just an old scar) or it may be caused by trouble in a sinus or air passage. It is seldom caused by pressure on the brain but may be the result of overdistention of some blood vessel within the skull, or leakage from an aneurysm.

Circle of Willis

The blood vessels of the brain form a network, the circle of Willis. In 1664, Dr. Willis noted that one of his patients had had a complete occlusion of the right carotid artery for many years, and had been tormented by severe left sided headaches. In his quaint way Dr. Willis said "the cause whereof I know not how better to explain, than that the blood excluded from the right Carotid Artery, when at first it rushed more impetuously in the left, had distended the membrane." We now know that this is true, and that certainly in many elderly people, when some arteries are narrowed, the others suffer from painful dilation. This pain at the back of the head is one of the warning signs of insufficiency of the basilar artery; it is as important in neurology as angina is in cardiology. The associated attacks of dizziness with dysarthria and other signs of impaired function in the brain stem are the clue to this kind of disorder. Likewise, distention of the internal carotid artery in its narrow canal, whether caused by head injury or by arteriosclerosis, is associated with a Horner's syndrome with narrow pupil on the side of the headache and distended artery. Some types of brain tumors take an enormous blood supply, draining their area of the circle of Willis. Dr. Bertram Selverstone will discuss the surgical aspects of head pain and its relation to the larger arteries.

Final Discussor

Dr. Bayard Horton, physician to the Mayo Clinic, who is well known for his original description of two very distinctive types of head pain — "histaminic cephalgia" (Horton's cephalgia), and also the syndrome of temporal arteritis, will be the final discussor. Histaminic cephalgia is an unusual kind of headache, so distinctive that once encountered, it will never be forgotten. Its most interesting feature is its brevity. The clear-cut cycle of an attack, its extremely localized and obvious manifestations, all offer more opportunity for direct analysis of the disorder. Yet it still remains an intriguing problem. Transitions between this disorder and classical migraine suggest that the solution of the one will solve the other. Temporal arteritis is also associated with very severe head pain, and Dr. Horton will discuss this and "histaminic cephalgia."

Although the discussion will cover these many varieties of headache, it must not be forgotten that there are still other varieties, especially those that arise from troubles that are primarily unrelated to the head in any way. For example, headache is a common symptom at the beginning of any fever, and is associated with kidney disease and high blood pressure, or with excessive loss of body fluids. What will be discussed chiefly are conditions in which headache is the leading or only trouble, assuming that the presence of other more general disease or disorder has been eliminated by a preliminary examination.

Fourth International Congress On Diseases of the Chest

The American College of Chest Physicians, an international society, has announced that its Fourth International Congress on Diseases of the Chest, sponsored by the Council on International Affairs of the College, will be held in Cologne, Germany, August 19 through 23.

Bone and Joint Surgeons to Meet in Minneapolis

The Association of Bone and Joint Surgeons will hold its annual meeting in Minneapolis March 22-24.

Dr. Louis W. Breck of El Paso is president of the Association.

HALLUX VALGUS

Booth, W. G., Letters to the Editor, Lancet 1:396, 1953

Terminal-phalanx hallux valgus is congenital. Developmental hallux valgus is unknown among children who have always gone barefoot. In England more than 50 per cent of school children have developmental hallux valgus and Booth contends that some all-embracing factor, such as tight shoes, must be responsible. Since hallux valgus disappears in children when properly fitted shoes are worn, it is difficult to accept the statement that there is no known cause. "Every child needs a new shoe fitting approximately every three months . . . How sad it is that this preventable condition is not prevented."

Clinical Clippings, May, 1953.

Mechanisms of Vascular Headache

By John R. Graham, M. D., Chief of Medical Service, Faulkner Hospital; Clinical Associate in Medicine, Massachusetts General Hospital, Boston

The title of this symposium is "Vascular Headache." My particular task is to discuss its pathogenesis. I will confine my remarks to the kind of headache known as "migraine" or "sick headache."

It is of value to consider what has been learned about this type of vascular headache by observation of its attributes and natural history. It is a widespread disease that occurs in about 10 per cent of the population. It is more prevalent in women than in men. Of great importance is the fact that it is familial. It can start to manifest itself as early in life as the victim can make it known, and probably earlier. This must be remembered when one is tempted to attribute its etiology entirely to factors that occur only later in life, such as the presence or disappearance of the menstrual cycle. It is at first, and in most cases continues to be, a periodic disorder that leaves no permanent changes so far detected in its wake. It can disappear entirely for long periods of time only to recur later, or it can gradually become a practically continuous condition as in "migraine status," or it can disappear in middle age never to return.

Perfectionistic Personality

It is more common and apparently more severe in persons with a perfectionistic personality, a delicate body build and high intelligence, but it is not limited to people with these attributes, and there are many people possessing them who do not have vascular headaches. It is a disorder that manifests itself powerfully in a focal area of the body but is also, at times, preceded by, and frequently accompanied by, manifestations of a more general systemic disturbance. There is a tendency in some subjects to alternate typical attacks of vascular headache with episodic disturbances affecting other parts of the body, such as paroxysmal tachycardia, abdominal pain, and vertigo. Although the statistics are not extensive or conclusive, carsickness, allergies, epilepsy and even gout seem to be unusually prevalent among victims of vascular headache and their families.

Headache becomes more frequent as life's stresses increase and diminishes as they grow less (fig. 1).

Headaches recede under the influence of severe illness and surgical operations (fig. 2), an observation that has been confirmed for a variety of operations and illnesses, including jaundice, without any specificity.

Pregnancy has a dramatically beneficial effect on vascular headache (fig. 3).

Since this type of response to operation and illness and pregnancy follows the behavior of rheumatoid arthritis as pointed out by Hench, a trial of cortisone

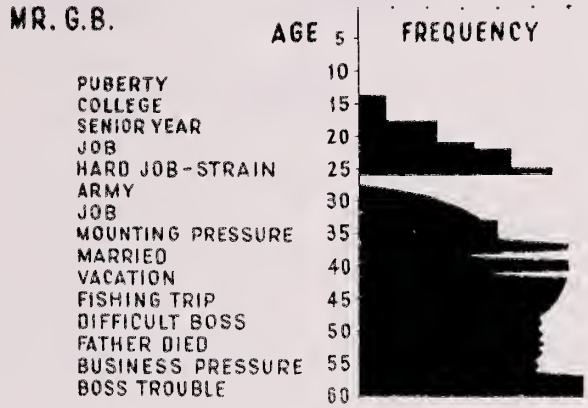


Figure 1.

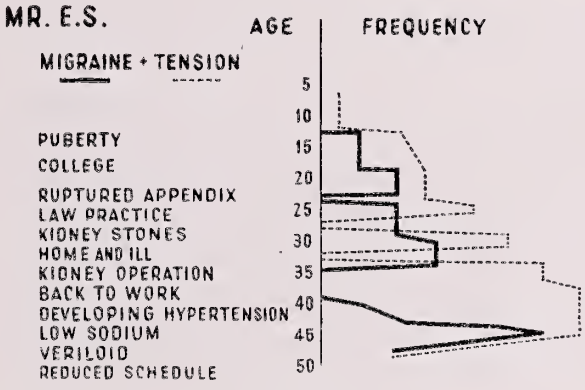


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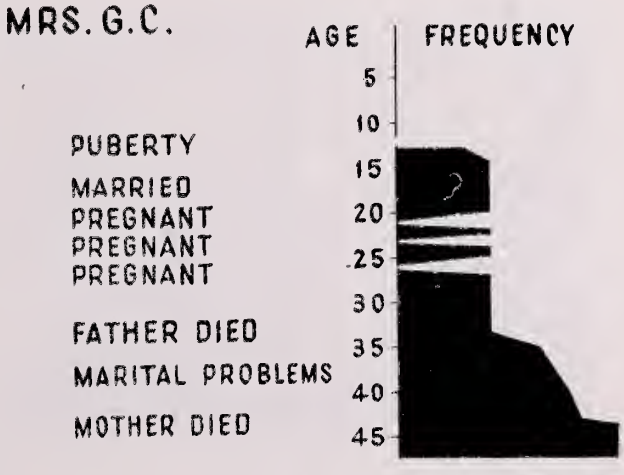


Figure 3.

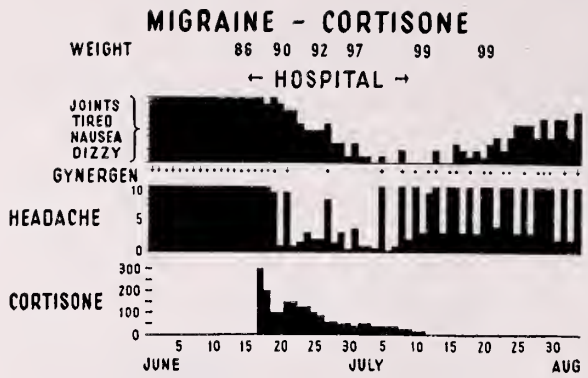


Figure 4.

seemed justified (fig. 4). Relief to migraine while cortisone is being administered was striking; all symptoms returned when cortisone was stopped.

The foregoing are observations of rather major points of behavior. They suggest that vascular headaches are made worse by increased exposure to stress of various types and are relieved when stress is removed, or the patient is removed from stress, or the patient is fortified against stress by the acquisition of additional "stress hormones" either through surgery, illness, pregnancy or the administration of steroids.

Some of the factors which precipitate attacks according to the patients are worth noting: bright light, noise, strong smells, changes in the weather, allergy to certain foods, hunger, physical fatigue, menstrual periods, menopause, emotional upsets and strain arising from arguments, resentments, difficult situations, confusion, crowds, shopping, guests, long drives, crowded schedules, exciting events. To be sure, the last on the list are the most commonly blamed, but the others, having a more somatic character, definitely need to be included.

Of especial interest is the fact that these headaches most commonly start in sleep or early in the morning, are especially liable to occur if the patient sleeps late, and have a sinful ability to spoil Saturdays, Sundays and holidays. They have a definite tendency to occur after the stressful period rather than during or before it. In my opinion they behave as if they were the result or aftermath of an experience rather than a psychological escape from an unpleasant situation that is about to take place.

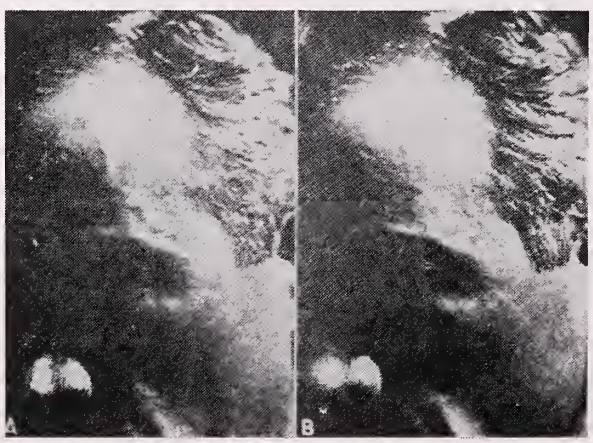


Figure 5.

All of these characteristics of the "sick headache" need to be kept in mind as we approach a more detailed study of the mechanisms involved in the actual attack.

In classical migraine, the attack is ushered in by visual scotomata, aphasia, hemianesthesia, and other striking neurological symptoms. When these clear up, the headache begins. There is considerable evidence that the first phase of this syndrome is associated with constriction of cerebral vessels and cortical ischemia. Pointing strongly in this direction is the fact that during this stage of the attack the administration of cerebral vasodilators such as CO_2 or small doses of nitroglycerin, alleviates the neurological disturbances. Electroencephalographic tracings made during this phase are consistent with cerebral ischemia.

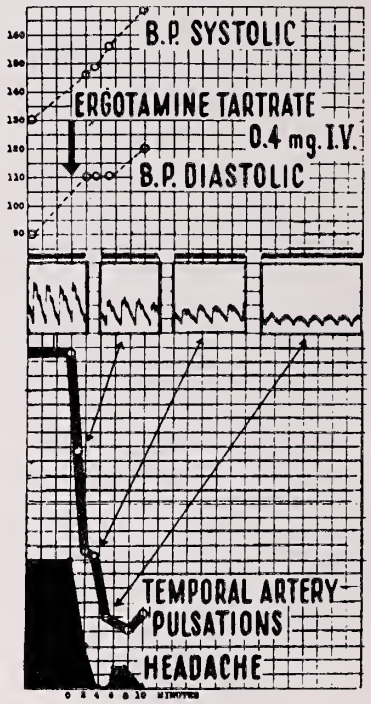


Figure 6.

Even in the "ordinary sick headache" in which the head pain is not preceded by bizarre neurological fireworks, there is evidence that vasoconstriction takes places in more superficial branches of the cranial vasculature before the headache begins.

On the other hand, when one considers the painful phase of the migraine attack, there is abundant evidence to show that the head*ache* is associated with dilatation and excessive pulsation of the cranial arterial tree (figs. 5, 6, 7).

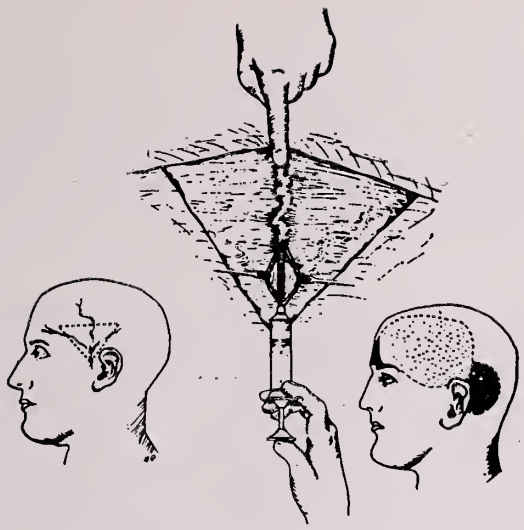


Figure 7

Figure 5 reveals a man on the left suffering from a left temporal headache. There is distention of the temporal vessels. Half an hour later, after the injection of ergotamine tartrate, his head pain had disappeared and the photograph on the right demonstrates the decrease in the prominence of the previously distended vessels.

Figure 6 shows pulse-wave-tracings from this same artery at the time of another headache and during its relief by ergotamine tartrate. Decrease in headache goes hand in hand with decrease in amplitude of temporal artery pulsation.

Figure 7 reveals the same artery at operation. When it was distended forcibly with saline, headache was reproduced; and when the artery and its perivascular coats were ligated and sectioned, the pain of subsequent headaches was relieved in the area supplied by this artery.

Manual compression of the carotid pulse on the affected side relieves headache. Drugs such as pituitrin, nor-epinephrine, ephedrine, and benzedrine, all relieve headache so long as they exert a constricting influence on the cranial vessels involved in the attack. On the other hand, vasodilating drugs, such as histamine and amylnitrite, make headache worse if given during the attack. Thus, the painful phase of migraine is at least associated with cranial vasodilatation and decreases with the cranial vasoconstriction brought about by either mechanical or pharmacologic agents.

This is not proof, however, that the dilatation in itself causes the pain. It is common experience that cranial vascular dilatation such as that occurring in sunburn or exposure to heat does not necessarily cause headache. Consequently, it is postulated that some additional factor, as yet unknown, must be at work at the site of the headache, which affects vessel walls and perivascular tissues in such a way that they respond with pain to vascular pulsation and dilatation.

What is this factor? Why should this vasodilatation be so prolonged and painful? Is the misbehavior of the cranial vessels but a part of a more complicated and deep-seated abnormality? These are the questions that need to be answered by future investigations. The observations made so far present me with the following hypothesis:

The patient with this type of headache has an inherited constitutional diathesis that predisposes him to this disease. Whether this has to do with localizing the condition to the head or has to do with more general systemic disturbances, or both, is hard to say. There is much to suggest that the vascular headache patient belongs to a broad group of patients subject to various relapsing disorders such as rheumatoid arthritis, asthma, ulcerative colitis, gout, and so on, in whom we find a similar relationship of the symptoms to stressful life situations. In all of these we observe an abnormality of response on the part of the adaptive mechanisms of the individual.

Vascular Headache

In the case of vascular headache, the cranial vasculature seems to be the system that is most affected, and there is a strong suggestion that these patients are particularly vulnerable to stresses that have their greatest impact upon the central nervous system. When stress of this type is experienced, the bodily defenses against it react imperfectly, too little or too late or inappropriately so that damage is allowed to occur and headache results. Recent studies reveal the necessity for intactness of the hypothalamic-pituitary-adrenocortical system if damage is to be prevented after strong autonomic nervous system activity, especially as applied to blood vessels. In the vascular headache, the suggestion is strong that the initial vasoconstriction is the result of prolonged or excessive sympathetic activity. The ischemia so produced might well not be so damaging to vessel walls if the supporting adrenocortical system operated quickly and adequately. If the supporting system is inadequate, damage to the vessel wall may be allowed to take place. The damaged vessel dilates and its wall becomes edematous. In this state, it is a source of pain when stretched by excessive arterial pulsation. The severity of the pain and other physical manifestations of the headache finally arouse the sleepy defense system which then goes into action, and brings about a reversal of the pathological process. Patients who inherit or are made with such a deficient defense system naturally get into more trouble if their personality is such that it drives them unduly into fatiguing, stressful situations.

This is only my hypothesis. Other observers are undoubtedly formulating their own, and I am sure there will be many variations and subsequent changes.

Temporal Arteritis

By Bayard T. Horton, M. D., Section of Medicine, Mayo Clinic, Rochester, Minnesota

I have been asked to comment on the headache of temporal arteritis, for it should be included in the "Symposium on Vascular Head Pain."

First described by Horton, Magath and Brown in 1932,[1] and in later publications,[2–5] temporal arteritis was officially recognized as a new disease entity in an editorial in the *Journal of the American Medical Association,* June 22, 1946, based on reports of 38 cases from the world's literature. From 1931 through 1954 a total of 103 patients were observed at the Mayo Clinic.[6] The disease occurs exclusively in older persons, the average age being 69.2 years. Of the 103 patients, 47 were men and 56 were women. The cause is unknown.

All patients with temporal arteritis have headache. It has been a prominent feature in each case. The pain is vascular in origin. The early stages of the illness usually give no clue as to its nature. Severe headache, which is present throughout the waking hours, difficulty in chewing, general malaise and lassitude, night sweats, symptoms of sepsis, anemia and a high sedimentation rate may persist for weeks before the appearance of the typically swollen temporal arteries. This is the foremost clinical feature of the disease. Hence, the term "temporal arteritis" is an appropriate descriptive name for the disease entity. In our series of cases the involved arteries have been resected in 61 per cent of our patients, and "giant cell arteritis" is the dominant histologic feature.

Ocular Involvement

Some type of ocular involvement, ranging from diplopia to complete blindness, has been observed in 53 per cent of cases at the clinic. Of the 103 patients in our series, 21 had bilateral loss of vision, either total or industrial, and 11 had unilateral loss of vision, either total or industrial. Sudden loss of vision in an elderly patient with headache and symptoms of sepsis should alert the physician to the possibility that the patient may have temporal arteritis.

The disease usually is not fatal and tends to run a self-limited course. Some patients have lived as long as 15 and 17 years after recovery from this illness. It is my impression that the disease frequently goes unrecognized.

Cortisone has been used in the treatment of temporal arteritis at the clinic since November, 1949.[7] The incidence of blindness has been definitely decreased since cortisone and corticotropin (ACTH) have been employed in its treatment. The use of cortisone and corticotropin and the intravenous administration of histamine also have been helpful in the symptomatic relief of headache. Removal of large segments of the involved temporal artery has given great relief of headache to many patients.

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Histaminic Cephalgia: Differential Diagnosis and Treatment*

Bayard T. Horton, M.D., Section of Medicine, Mayo Clinic and Mayo Foundation,† Rochester, Minnesota

The clinical picture of histaminic cephalgia must be accurately defined if valid conclusions are to be drawn from the observations that I wish to report. In so doing, I am attempting to describe only what I have seen and what my patients have told me. From 1937 to January, 1955, I have seen 1,176 patients with histaminic cephalgia. Of the 1,176 patients 1,023 were men and 153 women.

Histaminic cephalgia is a distinct clinical entity.[1–9] It occurs chiefly in males and is characterized by a unilateral headache of short duration, generally lasting less than an hour; it commences and often terminates suddenly and tends to awaken the patient at night, one to two hours after he has gone to sleep.

Patients usually refer to their attacks as "head pain" rather than headache. Pain is the outstanding complaint. It is usually steady, excruciating, burning and boring in character. The pain involves the region of the orbit and temple and may extend to the upper jaw, occasionally the lower jaw and into the occipital area, the neck and the shoulder. In the typical, full-blown case of histaminic cephalgia the height of the pain is associated with sweating (fig. 1, a and b), profuse watering and congestion of the eye, rhinorrhea or stuffiness of the nostril and often swelling of the temporal vessels of the involved side of the head.

Suicide Contemplated

So severe and frequent are the attacks of pain that practically every patient has contemplated suicide. I

*Part of the Symposium on Vascular Head Pains at the Tufts Univ. School of Med., Boston, Massachusetts, May 5, 1955.

†The Mayo Foundation, Rochester, Minnesota, is a part of the Graduate School of the University of Minnesota.

have never known one to carry out his threat, probably because of the short duration of the attack and the fact that he feels normal between attacks.

There are no trigger areas and the pain is not confined to the distribution of any cranial nerve. Nausea, vomiting and cortical phenomena are usually absent. There is no hereditary factor; hence, the syndrome should not be confused with trigeminal neuralgia or classic migraine.

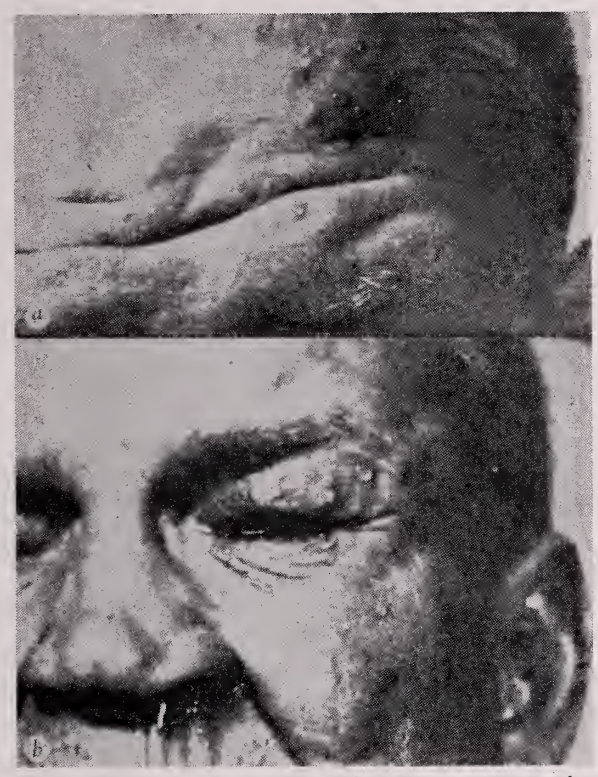


Figure 1. Appearance of a man 55 years of age during an induced attack of histaminic cephalgia. The attack developed 20 minutes after the subcutaneous administration of 0.35 mg. histamine base. Beads of perspiration are evident above the left eyebrow and in the left orbital area (a), and rhinorrhea from the left nostril is also evident (b). He had been having one to three attacks each 24 hours. The duration was from 15 to 60 minutes. This induced attack persisted for 20 minutes. He had previously had numerous intranasal operations, cocainization of the left sphenopalatine ganglion and deep injections of alcohol into the first and second divisions of the left fifth cranial nerve, without obtaining relief.

Residual soreness may persist in the region involved with pain for a short time after the attack has ceased.

Attacks tend to occur in a series and may appear to do so on a seasonal basis (fig. 2). Remissions and exacerbations occur spontaneously. Horner's syndrome is not uncommon in this type of case. The latter may disappear, after a given series of attacks has ceased, or may remain permanently.

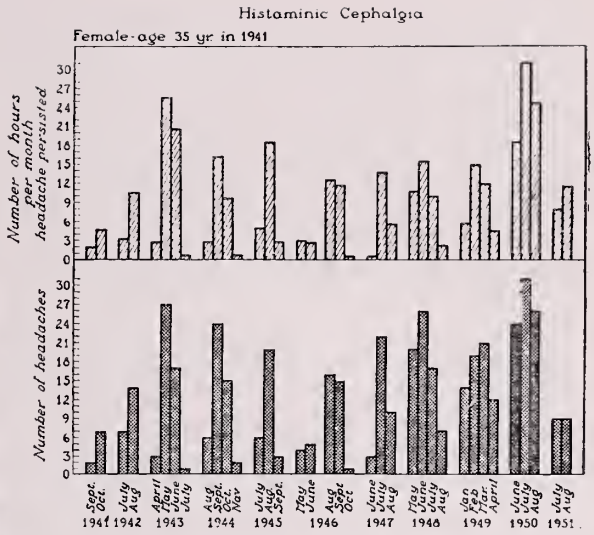


Figure 2. A graphic record illustrating the monthly incidence and total duration of attacks of histaminic cephalgia for 11 consecutive years. The patient was a woman who was 35 years of age in 1941.

Night attacks are characteristic of this illness (fig. 3) and often occur with clocklike regularity. The sudden onset of excruciating pain during sleep makes the patient get out of bed — sometimes he jumps out of bed before he is fully awake because assuming the erect posture tends to give slight relief from pain. Many patients have tried sleeping in a chair at night in a vain attempt to avoid such attacks. Some have tried sleeping during the day, but still the attacks have continued to occur during sleep.

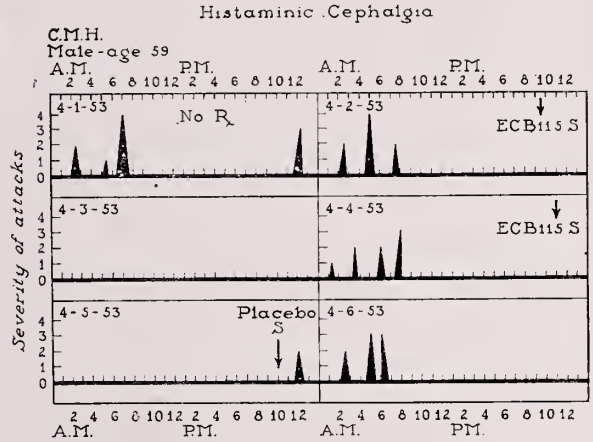


Figure 3.

Graph illustrating number and severity of nightly attacks of histamin cephalgia in a man aged 59 years. He was totally incapacitated and came to the clinic as an emergency case. The use of an ECB-115 rectal suppository at 10 p.m. on April 2, 1953, prevented nightly attacks. This was the first night in twelve previous nights that he had slept without an attack. The suppository

was not used the following night and four attacks developed between the hours of 1 a.m. and 7 a.m. The night of April 4, the ECB-115 suppository was again used at bedtime and the patient slept throughout the night without an attack. Then, on the night of April 5 he was given a placebo suppository which looked exactly like the ECB-115 suppository. He went to sleep but was awakened approximately 1 hour later with an attack, and during the night he had four attacks.

Converting Time of Attacks of Histaminic Cephalgia From Night to Day

Case #1. — A man, aged 34 years, came to the Mayo Clinic on September 3, 1951, because of recurring attacks of histaminic cephalgia, and was admitted as an emergency case. For the previous six weeks he had been having an average of five attacks each 24 hours. All attacks occurred at night, awakening him from sleep. The pain always made him get out of bed and pace the floor. Each attack lasted from 10 to 60 minutes. The pain involved the right temporal and orbital regions and spread down into the right side of the neck. It was very severe. At the height of the pain he invariably noted redness and tearing of the right eye and plugging of the right nostril.

Great Vessels

The great vessels in the right side of the neck were sore when palpated. He was not nauseated and had not vomited. Because of the frequency and severity of the night attacks, it seemed an excellent opportunity to determine whether a rectal suppository containing ergotamine tartrate and caffeine would prevent them. Accordingly, the first day he was at the clinic he was given one ECB-115 suppository to use at bedtime. Each ECB-115 suppository contains 2 mg. ergotamine tartrate, 100 mg. caffeine and 0.25 mg. bellafoline substance. The suppository was used at 10 p. m. and the patient slept the entire night without an attack of histaminic cephalgia developing. For eight consecutive nights at 10 p. m. he used the ECB-115 suppository and did not have a night attack, but he had 22 day attacks during this time.

Day Attacks

As he expressed it, "Doctor, you have converted my night attacks into day attacks." The day attacks began to occur approximately 55 hours after the use of the first ECB-115 suppository. On the ninth day he again went to bed at 10 p.m. but did not use the ECB-115 suppository. He had three attacks during the night. The first attack occurred between midnight and 1 a.m. and was of grade 2 in severity. The second occurred from 1 to 2:30 a.m. and was of grade 3 and the third occurred from 5:40 to 7:30 a.m. and was of grade 4. He had been free from attacks of histaminic cephalgia for four days and nights prior to his dismissal on September 20.

Discussion

Patients with tension headaches and migraine-tension headaches may occasionally be awakened at night with headache, but these attacks lack the explosive character experienced by the patient with the histaminic cephalgia syndrome. The patient having migraine-tension headaches is more apt to remain in bed than to get up and walk around.

In order to contemplate the clinical picture created by headache, one must have a starting point. A carefully recorded history will usually furnish more clues as to the underlying cause of the pain than will all other diagnostic procedures combined.

Since the turn of the century, many new mechanical devices have been brought forth to aid the physician in obtaining more accurate data regarding the patient, but little or no progress has been made from the standpoint of obtaining a more accurately recorded history.

Adequate treatment cannot be instituted until the type of headache has been determined. The patient should have a complete physical and neurologic examination; the eyes, ears, nose and throat should be carefully examined; roentgenographic examination of the head should be employed routinely, and special diagnostic tests also may be indicated in cases in which the presence of organic lesions is suspected.

Clinical Experience

The physician with a rich clinical experience gained from contact with patients should have little difficulty in differentiating histaminic cephalgia from classic migraine, trifacial neuralgia, atypical facial neuralgia and other head and face pains.

Histaminic cephalgia is a medical, not a surgical problem, and yet, approximately 40 per cent of my patients have previously undergone unnecessary operations in an attempt to obtain relief from their pain.

The transmission pain pathways of histaminic cephalgia have not been worked out completely. White and Sweet,[10] in their recent book on pain, have a chapter dealing with this syndrome to which they refer as "autonomic faciocephalalgia (Horton's syndrome)." They differentiate Horton's syndrome from migraine. A chapter entitled "Cephalic Pain—Transmission Pathways Uncertain" concludes with this significant statement, "To summarize this whole difficult problem one may say that operations on peripheral pathways have but little chance of success."

Many of my patients had undergone intranasal operations, cauterization of the sphenopalatine ganglion, extractions of teeth, injection of medicinal agents into one or more divisions of the fifth cranial nerve, cervical sympathectomies, resection of the lesser and greater superficial petrosal nerves, and ligation of the middle meningeal artery, the temporal artery, and even the external carotid artery—without obtaining complete relief of their pain. A number of interesting observations have been made in these "postoperative cases," but this will have to be reported elsewhere.

Provocative Tests

Failure of treatment and an error in diagnosis are attributable largely to the fact that the physician has not had an opportunity to see the patient in the course of a spontaneous or induced attack of histaminic cephalgia. Therefore provocative tests have been used and figure 4 illustrates the results obtained in a typical case. The reproduction of the attack and its subsequent abortion, although not always possible, are of great value both to the patient and to the physician. They permit the physician and the patient to have a common understanding of the nature of the problem. During the past 15 or more years, I have employed many provocative agents; but, from a practical standpoint, I feel that the subcutaneous administration of 0.35 mg. histamine base is the best agent to employ. This dose will "trip the mechanism" in more than 60 per cent of patients. This is especially true if the patient is experiencing more than one attack each 24 hours. The patient will tolerate this amount without undue discomfort, and larger doses are, as a rule, unnecessary.

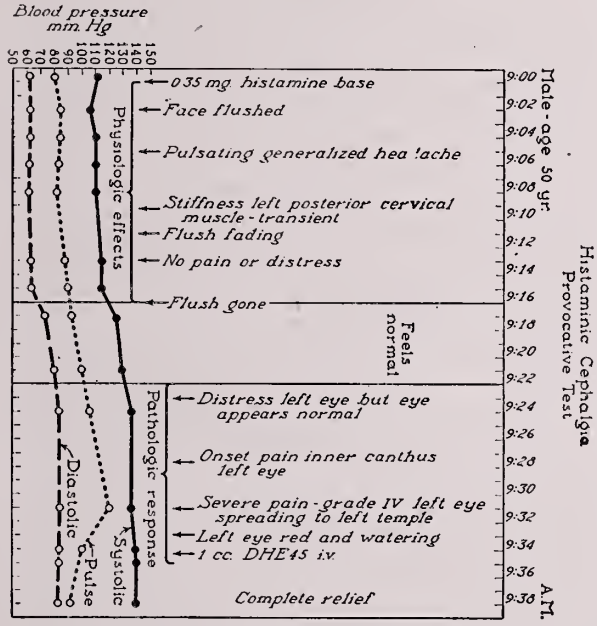


Figure 4. Provocative test which was carried out on October 5, 1950. A 50 year old man had been under observation at the clinic since September 7. During that time, he had had 54 attacks of left histaminic cephalgia and practically all of his attacks occurred at night. The induced attack, graphically illustrated, was identical with his previous spontaneous attacks. After the subcutaneous administration of 0.35 mg. histamine base, the physiologic effects of the drug persisted for 15 minutes. He felt quite normal for six minutes and then the pathologic response of the drug began to manifest itself. He first noted distress in the left eye and the severe pain had reached its height approximately 33 minutes after the beginning of the test. Redness and tearing of the left eye was noted at about the same time, or shortly thereafter. The attack was aborted fairly promply by the intravenous administration of 1 cc. of DHE45. With treatment, the patient's attacks ceased completely within days.

"Histamine headache" and "histaminic cephalgia" should not be regarded as synonymous terms. The immediate reaction after the administration of the histamine, as a provocative test is a generalized histamine headache, which is a physiologic response, lasting about 5 to 10 minutes. This response occurs in normal persons as well as in those who have histaminic cephalgia. Thereafter, for 5 to 30 minutes, and sometimes even longer, after the physiologic effects of the drug have worn off, the patient feels normal. One naturally wonders what is happening during the latent period. Therein may lie the secret to the mechanism of syndrome. In cases of histaminic cephalgia, however, reproduction of the typical attack will occur about 15 to 50 minutes after cessation of the histamine headache and is a pathologic response. It occurs only in cases of histaminic cephalgia. The pain of histamine headache is chiefly intracranial in origin, owing to dilatation of the large vessels at the base of the brain, whereas the pain of histaminic cephalgia results chiefly from dilatation of extracranial vessels.

Histaminic Cephalgia

Histaminic cephalgia appears to represent a localized anaphylactoid reaction with both localized and systemic manifestations. During spontaneous and induced attacks, it seems evident that histamine is released from sensitized cells in the region of the pain and accounts for most of the local phenomena. The rise in the acidity of the gastric contents indicates absorption of this agent in the blood stream, and is comparable to that which is induced by the subcutaneous injections of known amounts of histamine. Other biologic agents may be liberated in the region of pain. The induced attack usually can be aborted promptly by the intravenous administration of 1 cc. of dihydroergotamine (DHE45), which is dihydroergotamine methanesulfonate.

I have frequently been asked, "Does a negative histamine provocative test rule out the presence of histaminic cephalgia?" The answer is no, and an illustrative case follows.

Case #2.—A 46 year old man had his first series of attacks of left histaminic cephalgia in 1942; it persisted for six weeks and subsided spontaneously. He remained entirely free from attacks until the second series began on May 15, 1953. The severe bouts of pain occurred almost exclusively at night, usually ½ to 1½ hours after going to sleep. He occasionally had two or three attacks in one night. "The pain makes me get out of bed," he reported. Pain involved the left upper jaw, left orbital and temporal areas and persisted for 30 minutes to two hours. It required approximately five minutes for the pain to build up to its full intensity and it persisted at that level until it disappeared rather suddenly. During the at-

tack, redness and tearing of the left eye and plugging of the left nostril occurred. There were no trigger areas.

On July 18, he had alcohol injections of the first and second divisions of the left fifth cranial nerve. The attacks ceased for 72 hours and then recurred.

Provocative Tests.—On July 31, the patient was given 0.35 mg. histamine base administered subcutaneously. A negative result was obtained.

Next Day

The next day 0.48 mg. of histamine base was administered subcutaneously and 64 minutes later, a typical attack of left distaminic cephalgia developed. This occurred in spite of the fact that the regions supplied by the first and second divisions of the left fifth cranial nerve were still "numb" as a result of previous injections of alcohol.

Redness and tearing of the left eye were evident and plugging of the left nostril occurred. The patient could not differentiate between the induced attack and the previous spontaneous attacks. The induced attack was aborted within a period of two minutes after the intravenous administration of 1 cc. of DHE45.

I have also often been asked about the value of "histamine skin tests." "Do these tests give the physician accurate information regarding the patient's sensitivity to the drug?" Insofar as my experience is concerned, these skin tests are not of practical value. The size of the flare resulting from the intracutaneous injection of varying amounts of histamine is determined largely by the environmental temperature in which the test is carried out, rather than by the actual sensitivity of the patient. One may, for example, obtain positive results for a skin test in an environmental temperature of 85 to 90 F. and 40 per cent humidity, whereas negative results may be obtained in the same person if the environmental temperature is reduced to 65 to 70 F. and humidity of 40 per cent.

Treatment

Most patients with histaminic cephalgia are incapacitated at the time they come to the clinic. The objective of treatment should be twofold: (1) to alleviate the pain of the acute attack, and (2) to prevent subsequent attacks. In a few cases the breathing of 100 per cent oxygen will alleviate an attack to a marked extent if the attack is mild and if the patient resorts promptly to the use of oxygen. In order for the patient to use oxygen properly, it is necessary for him to have a tank at his bedside with an appropriate mask so that he can use it the moment the attack begins to develop. By so doing, many patients can abort attacks of grades 1 and 2. The use of oxygen, however, is of little or no value in attacks of grades 3 and 4. Severe attacks can frequently be aborted by the prompt intravenous administration of 1 cc. of DHE45 at the onset of the attack or shortly thereafter.

These two procedures may be combined and frequently are. Many physicians seem reluctant to administer DHE45 intravenously, but I have employed it in this manner since our original investigative studies 10 years ago, and I have not noted any ill effects from the use of the drug. If an attack is fully developed and has persisted for several minutes, it is likely to run its course irrespective of the drug employed.

Rectal suppositories which contain appropriate amounts of ergotamine tartrate and caffeine, if used at bedtime, frequently will prevent nocturnal attacks (fig. 3). This is an extremely useful procedure to employ. Suppositories are more effective in preventing nocturnal attacks than is the oral administration of ergotamine tartrate and caffeine.

Treatment of Choice

To prevent future attacks of histaminic cephalgia, histamine desensitization, in my opinion, is still the treatment of choice. My procedure for the subcutaneous administration of histamine is as follows:

I use the contents of a 1-cc. ampule of 0.275 mg. of histamine diphosphate per cubic centimeter, which contains 0.1 mg. of histamine base. Of this ampule, I use 0.05 cc. for the first dose, which is administered subcutaneously. Two injections are administered daily about six to eight hours apart. Each injection is increased by 0.05 cc. until 0.50 cc. is given. In some instances, this amount is not adequate and it is necessary to continue to increase the amount until 0.75 cc. or even 1 cc. is reached. Adequate dosage is determined by the patient's response. If immediate flushing of the face or throbbing is not experienced with the injection and if the patient's symptoms decrease in severity or frequency, the procedure is adequate. However, if the symptoms are aggravated or seem to be precipitated by the injections, the patient may be undergoing sensitization rather than desensitization. In such a case, the subsequent dose is reduced by half and, again, the amount administered at each injection is increased by increments of 0.05 cc. to a level just below the amount which precipitated the symptoms. This total amount is then injected twice daily as the maintenance dose. The patient is instructed in the technique of administering the injections to himself, whether the dose is 0.25 cc. or 0.75 cc., and is told to continue to use them twice daily at home for two or three weeks and once daily thereafter for an indefinite time. Some patients find it necessary to continue to use one injection, or even two or three injections, daily at home in order to remain free of symptoms. The maintenance doses of histamine may be continued for a life-time, if necessary, without harm. I am convinced that the use of smaller amounts of histamine at more frequent intervals controls symptoms more satisfactorily than large amounts administered subcutaneously only once daily or every other day.

False Security

After a long period of freedom from symptoms, many patients are lulled into a false sense of security, and they discontinue the injections of maintenance

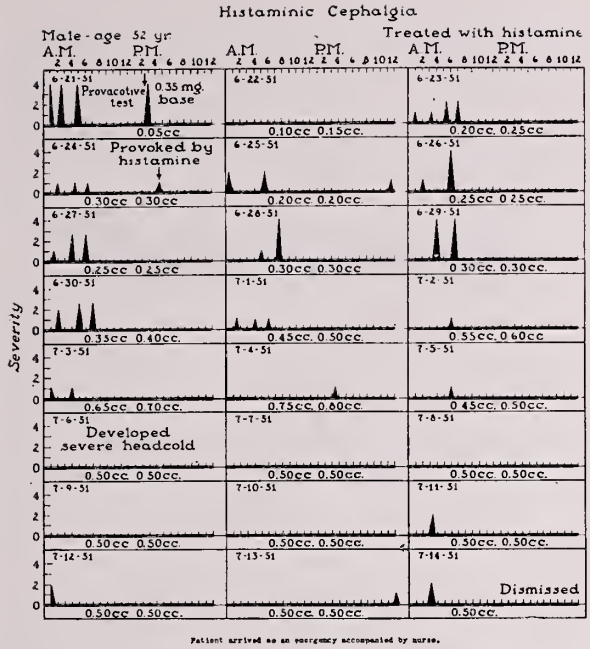


Figure 5. Graphic record illustrating clinical course and dosage of histamine employed in the treatment of the third series of attacks of histaminic cephalgia in a man aged 52 years.

doses. Many others report a recurrence of symptoms coincidental with an infection of the upper part of the respiratory tract. The maintenance dose then is inadequate, and resuming the desensitization schedule is often difficult because of the change in the patient's sensitivity. Many patients with histaminic cephalgia who experience a recurrence of headaches, report that they have attempted to resume the desensitization schedule and to increase the dose to the former maintenance level without realizing that, with a recurrance of the attacks, their sensitivity to histamine is greater than it was during the previous episode. The reason for this has not been determined. Only careful reports and observations of the patient's symptoms and response to injections in each 24 hours will give a clue to the schedule most satisfactory for each patient; hence, my expression that each schedule has to be "tailor-made" to fit the individual patient.

Histamine Desensitization

It is usually easy to treat a patient with histaminic cephalgia when he is observed for the first time, provided he has not previously had histamine therapy. About 95 per cent of the patients will respond to histamine desensitization, and the attacks, irrespective of their severity, frequency and duration, will cease within 10 to 20 days. However, if the patient has had histamine therapy previously, and especially if the dose has been above his reaction level, attempts to repeat the procedure cause the problem to become increasingly difficult.

The following brief report of a case illustrates this phase of the problem.

Case #3.—A man, aged 52 years, having three to four nightly attacks of left histaminic cephalgia for two years, came to the clinic in June, 1951. He was totally incapacitated because of the frequency and severity of his attacks. All attacks involved the left side of the head and tended to occur about one and one-half hours after he had gone to sleep. The pain, which was sudden in onset, persisted for approximately 30 minutes and terminated promptly. The pattern repeated itself whether he slept at night or during the day. At the time of his registration at the clinic he was suffering the third series of attacks, all of which had been experienced within the previous six years. The patient came as an emergency case and was accompanied by his wife and a trained nurse.

Previous Treatment.—In March, 1948, histamine desensitization was initiated and resulted in relief from attacks for eight months. Again, in November, 1948, histamine desensitization was carried out and this time relief was obtained for five months. Each time a maximal dose of 1 cc. standard solution, that is, 0.275 mg. histamine diphosphate per cubic centimeter, was abministered. In April, 1949, histamine desensitization was carried out for a third time. The same dosage was used. However, the attacks became more frequent and more severe, indicating that the patient was being "sensitized" to the drug.

In May 1949, the intravenous administration of histamine precipitated a severe attack. "I thought I would go wild with the pain," stated the patient.

Section of the left occipital nerve was performed within the month but the patient did not obtain relief.

Provocative Test.—The results of our standard histamine provocative test were positive. A typical attack of left histaminic cephalgia developed within 34 minutes after the subcutaneous administration of 0.35 mg. histamine base.

The treatment and the clinical course are depicted in figure 5. The patient was instructed to continue the use of 0.50 cc. of histamine daily, and has remained well.

To treat a succeeding series of attacks of histaminic cephalgia, the dose employed is decreased consistently. Experience has shown that if the same dose is used while treating the third series of attacks as was previously employed in the first, the patient may be made worse instead of better.

Histamine therapy is neither simple nor commonplace. It is fraught with many pitfalls. It is difficult to outline a schedule which will fit any large group of patients. The schedule *must* be "tailor-made" to fit each patient. Haphazard histamine therapy may produce haphazard results. Histamine is the most potent agent, so far as I am aware, known to medical science. It is up to the physician to employ it wisely.

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(Continued on page 167)

Treatment of Migraine* and Tension Headache

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It has been estimated that more than half of all patients who seek medical advice or attention have headaches as one of their complaints. In this vast majority the symptoms are either caused by migraine or are primarily associated with an emotional disturbance (tension or muscle contraction headache).

Rational therapy starts with the prerequisite that the physician should be able to diagnose the presenting type or types of headache. To make a diagnosis the physician should understand what is known about the underlying physiologic and psychologic mechanisms associated with headache. In addition, of course, a detailed history and thorough examination are essential.

In the management of migraine and tension headache (muscle contraction headache), one is dealing with both physical and emotional factors. Therefore, the goals of therapy are limited by the potentialities of the patient, the pharmacologic actions of the medications used, and the physician's interest in and orientation toward the problem. It has been my experience that a dual approach using pharmacotherapy and psychotherapy is the most successful method of therapy.

Pharmacotherapy: In pharmacologic treatment one or more of the following is attempted: (1) to raise the pain threshold, (2) to interrupt the mechanism of producing pain, or (3) to reduce the emotional tension and anxiety associated with the pain (fig. 1). However, the efficiency of any drug does not depend upon its pharmacological action alone. The importance of dosage, timing, mode of administration and toleration by the patient cannot be stressed sufficiently. Furthermore, such efficiency greatly depends upon the patient-physician relationship, which includes among other things, the length and frequency of interviews with the patient. Our experience indicates that the patients' reactions to drugs not only may depend upon the underlying disorder responsible for the headache, but also upon the degree of incapacity, constitutional makeup of the patient, duration of symptoms, age of individual and psychological status. What the taking of medication symbolizes to the patient is also a contributory factor in treatment. Is the taking of medication a sign of weakness to the patient to which he might resist, of receiving omnipotent mystical power, or of love and affection? All these factors must be given serious consideration in clinical usage of drugs in treatment of headache.

DRUGS USED IN TREATMENT OF HEADACHE

ANALGESICS

SEDATIVES

STIMULANTS OF THE CENTRAL NERVOUS SYSTEM

DRUGS ACTING ON THE CIRCULATION

HISTAMINE AND ANTIHISTAMINE AGENTS

VITAMINS

HORMONES

AUTONOMIC NERVOUS SYSTEM
(ACTING ON AUTONOMIC EFFECTOR CELLS)
CHOLINERGIC
ADRENERGIC

FIGURE 1.

In evaluating the subjective symptoms of head pain, there is such a tremendous psychologic factor that great care must be used in reporting success with any type of treatment. Investigation of the literature and of some of our own work revealed that good results obtained from the primary investigators are too infrequently duplicated on subsequent tests.

Psychotherapy: Psychotherapy is directed toward relieving the emotional tension and stress that are the precipitating factors in an attack of tension headache. The most important single factor in the psychotherapeutic process is the emotional relationship of the patient to the physician. This relationship dominates the treatment, despite the fact that it may be explicity discussed only rarely or not at all. In complete psychoanalysis, of course, this relationship is clearly recognized by the therapist.

In emphasizing the importance of the physician-patient relationship, one must not overlook the importance of other aspects of psychotherapeutic procedure such as environmental manipulation and the ventilation of wholly or partly unconscious emotional conflicts by the patient.

In environmental management one has to recognize and deal with the patient's capacity to handle his work, recreation, family and social life. The physician should strive to correct the patient's program so that work, play and rest are balanced. In some cases a sustained hobby is of value in securing relief from tension and daily stress. Concerning any changes

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in the patient's way of life, it is important that the doctor assist the patient in making his own decisions rather than making them for him.

Often simple explanations of the effect emotions have on bodily functions and the relationship of stress situations to development of symptoms may give the patient insight into what occurs to him during periods of stress. Reassurance, suggestion, and reeducation are other helpful technics.

Such therapy is within the province and ability of the interested general practitioner. With this treatment, over-all improvement in terms of greater capacity for life adjustment and a reduction of the habit patterns that lead to activation of the physiologic mechanism causing the headache can be anticipated. Formalized psychiatric treatment is necessary for some patients in whom reorganization of the personality is necessary to secure relief.

Migraine Therapy

Symptomatic: Pharmacotherapy has been markedly successful in the management of an actual attack of migraine. At present the ergot derivatives are the most useful drugs in the treatment of a migraine attack and the most effective of these alkaloids is ergotamine tartrate. Clinical evidence of its beneficial effects has been supported by experimental observations in the laboratory.

Ergot is a fungus (*Claviceps purpurea*) growing in the grain of cereals and is obtained from rye. All ergot alkaloids are derived from lysergic acid and are related chemically as well in their actions.

The active levorotatory isomers of all ergot alkaloids posess powerful central nervous system actions, while those ergot alkaloids containing polypeptide side chain (i.e., ergotamine and ergotoxine) also have a significant adrenergic blocking activity.

One very characteristic effect of the ergot alkaloid is a direct stimulation of smooth muscle in many organs. In most cases it occurse in smaller doses than necessary to produce adrenergic blocking.

Although ergot alkaloids with significant adrenergic blocking activity contain a polypeptide side chain that is noted in ergotamine and ergotoxine, it is questionable whether this effect takes place in the dosage used in the treatment of headache. Hydrogenation decreases the ability to stimulate smooth muscle and increases the adrenergic blocking activity of all natural alkaloids. In the treatment of migraine the hydrogenation of ergot alkaloids that increases adrenergic blocking activity reduces the effectiveness in migraine treatment.

The benefit that ensues following the taking of ergotamine for an attack of migraine is probably the result of the direct action of the substance on the smooth muscles of the blood vessels, producing a constriction of these vessels that causes a decrease in amplitude of pulsation. This is particularly noticeable in the circulation of the external carotid.

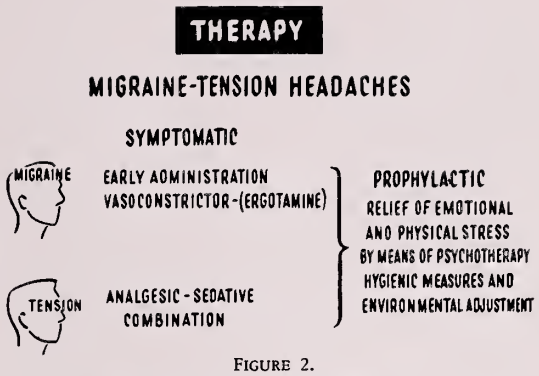


FIGURE 2.

Symptomatic Treatment

Symptomatic treatment of migraine is most effective by use of oral or rectal ergotamine tartrate and caffeine. Nausea and vomiting can be relieved by use of an antispasmodic and/or sedative with this preparation. Rectal use has proved empirically to be most efficacious, especially when oral medication cannot be retained (fig. 2). It is likely that rectal medication has the advantage of being absorbed more directly into the systemic circulation without having to penetrate the hepatic and gastric barriers. Hence, it is postulated that its action is faster with fewer side effects than by oral administration. This requires further investigation.

The importance of administering the medication early in the course of an attack, as well as in adequate doses, cannot be over-estimated. Many failures in therapy are caused by an inadequate dose given too late. The optimal time of administration is in the prodromal period or immediately after onset of the headache.

Ergotamine is contraindicated in organic heart disease, obliterative vascular disease, hypertension, pregnancy, hepatic disease and septic states associated with intravascular foci.

In some patients ergotamine tartrate is poorly tolerated and the use of dihydroergotamine methanesulfonate (DHE-45) is indicated. Dihydrogenation of ergot reduces the vasoconstrictive action. In order to produce an equivalent therapeutic effect, dihydroergotamine must be given in doses twice as great as ergotamine tartrate. It can only be administered parenterally, and like ergotamine, must be given as early as possible in the attack.

Vasodilators such as histamine, B-methylacetylcholine (mecholyl), nicotinic acid, amyl nitrite, intravenous magnesium sulfate, and so on, have been used in the prodromal stage (vasoconstrictor phase) in order to abort the attack, and in the headache stage (vasodilator phase) to lower the blood pressure sufficiently to reduce the arterial pulsations. Except in a few isolated cases, these preparations are of little value.

Analgesics and sedatives are sometimes indicated if the headache has been present long enough for edema to take place and the vessels to become firm

and tortuous. In these cases codeine phosphate with or without sodium amytal or seconal (0.1 gm.) is indicated.

Prophylactic: It is well known that suitable psychotherapy may be of great value in reducing the intensity and number of migraine attacks in most patients, and may even result in their disappearance for a considerable time. The details of this type of therapy have already been discussed.

Adequate relaxation, improvement in sleep and correction of any physiological abnormalities will be of help in reducing the frequency of the attacks. In a few cases there may be evidence that the precipitating mechanism is allergic, endocrine or "metabolic." It has been my experience that these factors are too isolated to be of real value in therapy. However, when an offending allergen is responsible it should be removed or the patient desensitized. If the onset of migraine is associated with the menstrual period the use of progesterone or testosterone, or both, may occasionally be helpful.

Reported studies in patients with migraine and other types of vascular headache indicated that there are major alterations in electrolyte balance in association with headache. These are characterized by low rates of excretion of water, sodium, potassium and creatinine prior to headache and higher rates of excretion during the phase of subsidence of headache. In the premigraine phase and early stages of an attack, the sodium and other electrolytes rise to a high level, while at the same time there is a marked hydration of blood. The suggestion is made that these disturbances are caused by disordered functions of the hormones governing salt and water metabolism of the adrenal cortex and posterior pituitary gland and that in women these are exacerbated by the influence of certain sex hormones.

Hydrated Patients

In our investigative work we have hydrated patients with intravenous infusions after which an antidiuretic hormone and later a diuretic hormone were administered. No abnormal findings were obtained in any of these patients and none developed headaches subsequent to the tests. It is most likely that fluid electrolyte and renal changes are widespread evidence of bodily changes accompanying vascular headaches and not a causal factor.

In those patients in whom rapid weight gain and afterwards polyuria occur, the use of various diuretics is worth a trial. Among these are the acid diuretic salts, such as ammonium chloride, urea, and a newer group of diuretics, which have been recently introduced, such as neohydrine and diamox. Our experience with diamox in a small number of patients has been reasonably successful. However, these indications are not final proof of the value of this type of medication. We still do not know whether a diuretic that works primarily on the renal tubules or one that prevents or suppresses the A.D.H. action of pitressin is the most valuable in treating headaches associated with electrolyte imbalance.

Drugs Of No Value

The use of such drugs as histamine, nicotinic acid, and so on, in my experience is of no value. Sedatives to reduce emotional tension are limited in their usefulness. Recently we have used reserpine and thorazine as interim treatment with migraine patients; our results have not been encouraging.

The periodic and often paroxysmal nature of migraine and other types of vascular headache brought forth the idea that treatment with anticonvulsants might be of value in these disorders.

A small number of migraine sufferers respond well to mesantoin and dilantin prophylactically. This limited group consists of patients who have an aura of aphasia, paresthesias or hemiplegia prior to the headache and an abnormal encephalogram. In certain other patients who have a family history of migraine and epilepsy and on encephalogram show an abnormal brain wave with spiked patterns, the use of certain anticonvulsive drugs is of value in reducing the frequency, severity and duration of the headache.

The hydantoins are closely related to the barbiturates, being derivatives of glycolyl urea as compared with malonyl urea. Both hydantoins, dilantin and mesantoin, may produce bizarre and unsuspected side reactions which occasionally may limit their usefulness in therapy. Of special interest is the effect of mesantoin on the hematopoietic system, which may produce an increase in lymphocytes and depression of the polymorphonuclear leukocytes. Hence it is necessary to follow these drugs with blood counts that can be the earliest indication of toxicity. There have been cases of aplastic anemia and leukopenia following the use of mesantoin reported in the literature.

Tension Headache

Symptomatic: Symptomatic relief from tension headache is secured by drug therapy, which as in psychotherapy, must have flexibility for its keynote. The treatment of tension headache is nonspecific, but the purpose of therapy is to relieve tension and raise the pain threshold. This is best accomplished by use of an analgesic-sedative combination. Such a combination should react with minimal side effects allowing the patient to maintain his environmental relations and not become a problem because of addiction potential or development of tolerance.

The most practical and useful analgesics used in the treatment of headache are the antipyretic analgesic group of coal tar derivatives, such as acetylsalicylic acid and acetophenetidin. They act by raising the pain threshold possibly through depression of pain centers in the thalamus. In therapeutic doses they do cause mental disturbances, anesthesia or changes in modalities of sensation. The types of pain relieved by salicylates are of low intensities.

Certain techniques, particularly those of Hardy and Wolf, demonstrated that acetylsalicylic acid elevates the pain threshold half as much as morphine. Other investigators have not been able to demonstrate threshold raising action in animals or man. All analgesics have a ceiling beyond which no additional increase in the pain threshold is obtained. A maximum analgesic action may be secured by relatively small doses such as 10 grains of acetylsalicylic acid or acetophenetidin. However, the duration of action is prolonged by more frequent doses. Combinations of analgesic drugs do not increase the maximum effect, the ultimate threshold being that of the most active component (i.e., codeine and acetylsalicylic acid pain threshold is raised only to that of codeine). Analgesics do not potentiate the hypnotic action of barbiturates but barbiturates potentiate the action of analgesics.

The most effective symptomatic medication in the treatment of tension headache has been several analgesic and sedative combinations. In some cases empirin compound will suffice.

Opiate analgesics are used for the relief of severe pain as well as a sedative action. However, we do not recommend the use of morphine or synthetic drugs like demerol, methadon, and so on, in the treatment of chronic headache because of their addiction potentialities.

Codeine (methylmorphine) occurs in opium to the extent of about 0.5 per cent. It possesses much less analgesic potency than morphine but is the most effective relatively safe analgesic drug for treatment of chronic headache. Although both tolerance and addiction from continuous use have been recognized, these are uncommon.

Prophylactic: Control of tension headaches can best be accomplished by use of psychotherapy, for

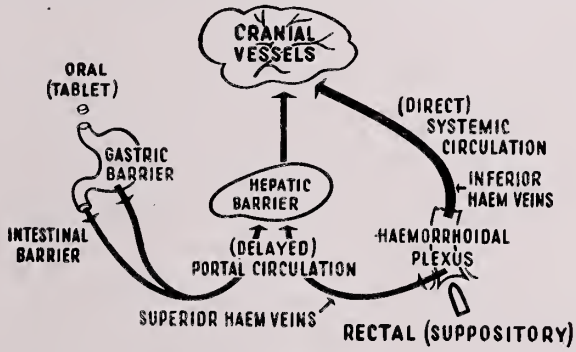


FIGURE 3.

this is the only method in which the patient's emotional conflicts can be resolved.

The use of sedatives such as barbitals and analgesics are only of temporary effect. Furthermore, their side effects curtail prolonged usage.

More recently, we have used reserpine on over 100 patients with tension headaches. They have been treated for periods of 2 ot 9 months with moderate success. Improvement was noted in 2 out of 3 patients on the average dosage range of 0.75 mg. daily. Little difficulty was encountered from side effects. However, as has been noted elsewhere, the effectiveness of any drug with headache patients consists of a multiplicity of factors. The results with reserpine should be considered only as a preliminary trend and not conclusive.

Conclusions

Migraine and tension headache should be treated both symptomatically and prophylactically (fig. 3). Symptomatic treatment is essentially one of pharmacotherapy while prevention of an attack is best accomplished by psychotherapy.

Clinical Notes From Grand Rounds

These notes are abstracts of opinions expressed by staff members during case presentations at the Friday Grand Rounds of the Pratt Diagnostic Clinic — New England Center Hospital.

Iceland disease is the name of a new epidemic disorder that is sometimes confused with poliomyelitis and polyneuritis. No etiologic agent has as yet been isolated. It was first described in Iceland. Epidemics have also occurred in Florida and New York State, and isolated cases have been encountered at many other points. Clinically it is characterized by fever, headaches, muscle aches, tenderness, ensory disturbances (numbness and dysesthesia), and emotional instability. Pain may occur in the distribution of a nerve root. Abortion commonly occurs in pregnant women. The spinal fluid findings are variable; they consist largely of an increase in lymphocytes. Occasionally, splenomegaly may be present. The course is often prolonged, symptoms continuing at times up to 15 months, consisting largely of fatigue and body pains. The prognosis for eventual recovery is good.

▼ ▼ ▼

In from 10 to 40 per cent of patients shortly following mitral commisurotomy fever, chest pain, arthralgias, transient pleurisy, and electrocardiographic changes (inverted T waves and prolonged P-R interval) occur. It is believed that the stress of the operation reactivates rheumatic fever. The symptoms respond to salicylates or subside spontaneously, but may recur and again respond to treatment.

(Continued from page 163)

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Neurosurgical Aspects of Head Pain

By Bertram Selverstone, M.D., Neuro-surgeon-in-Chief, New England Center Hospital; Professor of Neurosurgery, Tufts University School of Medicine, Boston

The neurosurgeon has a twofold interest in the treatment of head pain. He is on surest ground when his purpose is the removal of a lesion that is causing pain. He must tread with more caution when he attempts to relieve pain by interrupting its pathways to consciousness, since he must usually accomplish his objective by producing some degree of neurological deficit. A small area of sensory loss that would be accepted gratefully as a substitute for pain will add to a patient's distress if even a part of the original discomfort persists after operation.

Most of the soft tissues of the face and scalp, as well as the deeper structures of the pharynx and neck, contain nerve endings for pain. The structures within the skull, as Wolff and Ray have so carefully shown, are sensitive to pain only in certain specialized regions.

Outside Origins

It is not surprising that a great number of pains in the head and face have their origins outside the skull in branches of the external carotid artery, for example, and in inflammations and tumors of the scalp, paranasal sinuses and orbits. Carcinomas and other malignant lesions in these areas may present distressing problems to the neurosurgeon. A well organized tumor clinic, where the neurosurgeon works with the otolaryngologist, oral surgeon, ophthalmologist, general surgeon and radiologist, provides an ideal setting for evaluation and treatment of these patients.

When such tumors invade the central nervous system or its coverings, the neurosurgeon must attempt their removal. Invasion of cranial nerves or of other painful structures makes it necessary for him to interrupt pathways in the fifth, seventh, ninth and tenth cranial nerves, and in the upper three cervical nerves, for the relief of unbearable pain in the head and face.

Complex Procedures

But section of sensory roots may, for reasons that are far from clear, fail to relieve the pain of a deeply invasive malignant lesion, and the neurosurgeon may be forced to attempt more complex procedures upon the central pain pathways. Elsewhere in the body, we know that interruption of the second pain neuron by anterolateral cordotomy is most effective for relief of pain in the limbs or trunk, even though caused by a highly invasive cancer.

For relief of head and face pain, we may interrupt this second neuron in the quintothalamic path of the mesencephalon or may destroy its end station in the posteromedial ventral nucleus of the thalamus. Such procedures as these, whether performed by means of standard neurosurgical methods or by stereotaxic techniques, are already with us but they are as yet neither safe enough nor sufficiently reliable for routine use. More often than we should like, we are forced to use one of the varieties of prefrontal lobotomy which, without interrupting its pathways, may alter emotional responses to pain and also to impending death.

Dramatic Relief

Pain originating in the blood vessels of the scalp and face may come to the attention of the neurosurgeon either before or after medical means for its management have been attempted. The dramatic relief that arterial section brings to the patient with cranial arteritis must not lead to fruitless efforts to treat vascular headaches such as migraine routinely by division of branches of the external carotid artery.

There is no doubt that vascular ligation may provide relief from painful vasodilatation for weeks or months, but pain may recur worse than before when new collaterals dilate. Occasionally, a patient with unusually severe migraine becomes addicted to morphine or demerol or threatens suicide. In such a case, the neurosurgeon may justifiably divide the medial fibers of the trigeminal posterior root, and will usually relieve the pain.

Increased Pressure

Within the skull, we have often thought of increased intracranial pressure as a cause of head pain. It has become increasingly clear that symmetrically increased pressure may produce no pain at all. The brain and most of the pia and arachnoid, except where great vessels enter or leave, are insensitive as is most of the dura over the vault of the skull. The basal dura, falx and tentorium and the meningeal and large basal arteries are sensitive, as are the walls of the great venous sinuses.

A brain tumor or a subdural hematoma may produce severe headache without increasing the intracranial pressure. It does so by distorting or pressing upon the pain-sensitive intracranial structures. In a meningioma, dilatation of the meningeal vessels which help to feed it may be painful. Sensory cranial nerves may also be compressed or stretched by basal meningiomas. After removal of a brain tumor, headache is usually immediately relieved, although increased intracranial pressure may persist for several days. Return of a deformed sensitive structure, such as a stretched internal carotid or middle cerebral artery, to normal position is presumably responsible for relief of the pain (fig. 1).

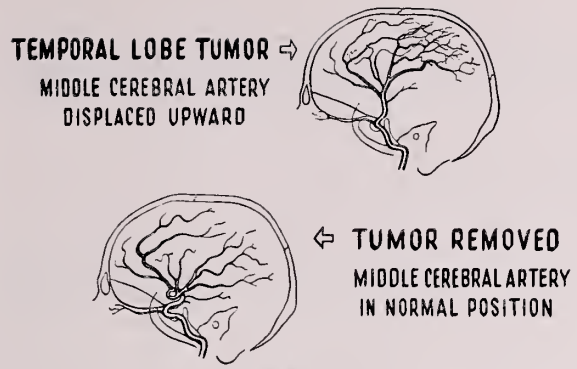


FIGURE 1.

Cerebral Angiography

With the advent of cerebral angiography, which usually permits precise location of an aneurysm or vascular malformation, the neurosurgeon has seen increasing numbers of patients who have had a recent subarachnoid hemorrhage. When an aneurysm ruptures into the subarachnoid space, it produces an excruciating, sudden pain as the arterial stream distorts and deforms the great vessels about the base of the brain. If the patient survives the initial catastrophe, as he usually does, headache persists as long as blood and its breakdown products irritate basal meninges and sensory nerve roots, both cranial and cervical.

Aneurysms may also produce pain before they actually rupture. Vague, poorly localized headaches may result from distention of the walls of an enlarging aneurysm, but much more severe and acute pain comes when an aneurysm impinges against one or more branches of the trigeminal nerve as they pass into or through the cavernous sinus. Jefferson has shown that from the location of the characteristic pain and numbness, the precise site of an intracavernous carotid aneurysm may be localized.

Pain caused by aneurysmal compression of trigeminal branches may be momentarily relieved quite completely by compression of the common or internal carotid artery in the neck. If the aneurysm is clipped or trapped between clips or, indeed, if the internal carotid artery is simply occluded in the neck, pressure within the aneurysm is so reduced that the pain is permanently relieved (fig. 2).

Certain head and face pains are dramatically relieved by interruption of pain pathways. In this group is *tic douloureux,* the common paroxysmal neuralgia of the trigeminal nerve. While we are not certain of the site of the pathological lesion responsible for the sudden, unilateral, lancinating pain of this disease, it seems likely that it lies in the Gasserian ganglion or in its posterior root. Since pain is temporarily relieved, sometimes for years, by injection or section of peripheral branches of the nerve, it is likely that denervation of the "trigger zone" rather than of the painful area itself is responsible for the good effect of these procedures.

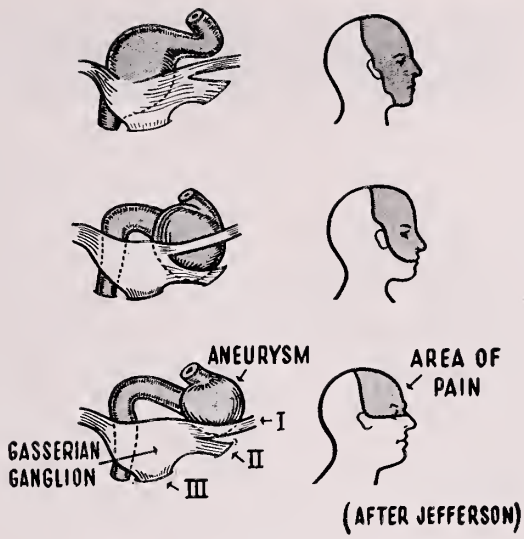


FIGURE 2.

There are less common neuralgias of the nervus intermedius and of the glossopharyngeal nerve which seem quite analogous in their clinical features to *tic douloureux.* These are all permanently relieved by section of the appropriate posterior roots. Our success with such operations should not encourage their indiscriminate use in the "atypical" neuralgias of the face and head, especially those characterized by constant aching, throbbing or burning pain. Denervation of a painful area is by no means a cure-all. In postherpetic neuralgia, for example, posterior root section is fruitless, since the disease involves the *substantia gelatinosa* of the trigeminal nucleus itself as well as the sensory cells of the Gasserian ganglion.

Syndrome Described

Since section of the second neuron by means of anterolateral cordotomy will effectively relieve postherpetic neuralgia of the trunk or limbs, we believe that we shall eventually be able to treat it in the face and head by producing lesions in secondary trigeminal paths in midbrain or thalamus. The syndrome so well described by Horton as "histamine cephalalgia," where paroxysms of head and face pain are associated with unilateral lacrimation and conjunctival injection, can sometimes be treated surgically. A number of such patients, as reported by Gardner, may be helped by section of the greater superficial petrosal nerve. We have relieved a number of patients with severe attacks of this type by radical devascularization of the meninges in the middle cranial fossa. Most of them are, however, best treated by nonsurgical methods.

It is the neurosurgeon's first responsibility to sort out from the great number of patients who complain of head pain those who have potentially dangerous lesions. Among the rest, he must choose carefully, for an ill-conceived operation, even a minor one, may be the first step of a fruitless Odyssey in which the patient travels from clinic to clinic, seeking an external solution for a problem whose answer, if there is one, lies within himself.

CURRENT THERAPY

Agammaglobulinemia

By Jack A. Bernard, M. D., El Paso

In recent years, there has been described in adults and children a syndrome in which recurrent severe infections, commonly pulmonary, have occurred in association with marked depression or absence of gamma globulin in the serum. (In infants: Intractable diarrhea and sudden death). This seemingly rare condition warrants publicizing because its recognition is important in that such cases may be treated with gamma globulin thereby reducing morbidity and prolonging life.

Agammaglobulinemia is characterized by marked depression or absence of gamma globulin, multiple infections and inability to form antibodies. The infections are mostly bacterial and include pyoderma, oteitis media, pneumonia, sepsis, and others. Normal viral antibody mechanisms are thought to be intact but one case of fatal generalized vaccinia is reported.

Pathological Sections

Pathological sections have shown only diminished gamma globulin content of the lymphoid tissue and the absence of plasma and preplasma cells.

Most of the cases described have occurred in children and have been predominately in males. These had recurring infections since infancy. The infections have responded promptly to antibiotics but would return promptly after therapy was discontinued.

There seems to be two types of agammaglobulinemia: One in which the patient is rarely ill, has edema with hypoproteinemia, and does not respond to various antigens, but responds to high protein feedings. The other type: In which the absence of gamma globulin is accompanied by recurrent infections and there is lack of response to toxoid or antigens and where there is response to injections of gamma globulin. The latter type has been reported more often in young boys (age 8 or 9) and is thought perhaps to be congenital in origin. Also there is a similar acquired type in adults, commonly associated with malignant lymphomas and other blood dyscrasias.

Susceptibility to Infection

In the cases of pure gamma globulin deficiency, the predominate clinical feature is susceptibility to infection. Such cases probably did not survive before the days of antibiotics. Hence this and the previous lack of methods of estimating gamma globulin may explain why such cases have not previously been described.

Diagnosis may be suggested by the history of repeated infections with the same bacterial or viral agent, absent or low immune response to vaccination or innoculations, such as the Schick and Dick tests and Tuberculin test.

Early Diagnosis

Much remains to be clarified as regards agammaglobulinemia. Early diagnosis is essential as such patients may be benefited, perhaps kept free from infection, with prolongation of life, by monthly subcutaneous injections of 0.1 gm. gram of pooled normal serum gamma globulin per kilogram of body weight. If no response, prophylactic antibiotic therapy alone or in conjunction with the gamma globulin may be helpful.

The physician should be alert for this apparently rare deficiency in children, particularly males who have had repeated respiratory or other infections, and in others who have had repeated infections, "poor resistance," or poor response to immune reactions. To confirm the diagnosis the blood may be taken from such suspected cases and the serum forwarded to the laboratory for study.

Course In Surgery In Acute Trauma At William Beaumont Hospital

A course in surgery in acute trauma will be conducted at William Beaumont Army Hospital, El Paso, April 2-6.

This course covers the important aspects and methods of handling patients subjected to various types of trauma. It includes consideration of such subjects as triage, the shock state, control of hemorrhage, debridement, management and transportation of the wounded, principles of treatment of bone and joint injuries, abdominal and chest injuries, head injuries, etc.

The course is open to civilian as well as military physicians without payment of a fee. Any civilian physician desiring to attend is advised to write to:

Commanding Officer
William Beaumont Army Hospital
El Paso, Texas

Reserve officers, not on active duty, desiring to receive credit points for attendance, are advised to contact their local Army Reserve Office or Military District Headquarters.

Military physicians are advised to apply through their Commanding Officer.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

By Andrew M. Babey, M.D., Las Cruces, N. M.

1. "To greet a patient with, "You look better," without even having really looked at him, is harmful." Edward A. Strecker; *Veterans Administration Tech. Bull.* April 15, 1954; Section 10-99 P. 3.

2. "Of all the techniques of psychotherapy, suggestion is the least useful . . . . Suggestion smacks too much of the ancient medicine men. It is illogical. It is just as erroneous for the patient to believe that stroking the palsied arm or a "shot" of electricity cured the paralysis as was the original belief that the arm was physically paralyzed. The appeal of suggestion is to emotional immaturity and it encourages emotional dependencies. Finally, it is inherently dishonest, and it threatens the relationship between patient and doctor which must be built upon mutual frankness and confidence." E. Strecker; *loc. cit.;* P. 4

3. "Indiscriminate counseling is harmful. It creates unmanageable emotional dependencies and weakens the ego. Decisions should not be made for the patient about such weighty matters as marriage, divorce, occupation, etc." E. Strecker; *loc. cit.;* P. 5

4. "The physician who hates Jews, Negroes, or Catholics, or Methodists, New Dealers, Republicans, Democrats, or, indeed, whose hatred of those who are not like him or do not think as he does, is not fit to deal with human emotional problems." E. Strecker; *loc. cit.;* P. 6

5. "The wise therapist will be too wary to take on both husband and wife for continued treatment. He will be subjected to too strong an insistence that he take sides." E. Strecker; *loc. cit.;* P. 7

Necessity of Religion

6. "In 1932, Jung wrote, "During the past thirty years people from all civilized countries of the earth have consulted me. I have treated many hundreds of patients, the large number being Protestants, a small number of Jews, and not more than five or six believing Catholics. Among all my patients in the second half of life . . . there has not been one whose problem in the last resort was not that of finding a religious outlook on life. It is safe to say that every one of them fell ill because he had lost that which the living religions of every age had given their followers, and none of them had been really healed who did not regain his religious outlook." E. Strecker; *loc. cit.;* P. 8

7. "Therapy is a two-way process. Not only is the therapist making an image of the patient, but the patient is constructing a facsimile of the therapist. And the patient is psychologically uncanny in noting signs of disinterest, boredom, sentimental sympathy, antagonism." E. Strecker; *loc. cit.;* P. 9.

8. "It is abundantly clear that the blood stream is endowed with powerful antibacterial defenses and that, in most instances, the ability of the circulation to clear itself of invading pathogenic organisms persists unimpaired even in the dying host." Ivan L. Bennett; *Veterans Administration Tech. Bull.* November 30, 1954; Section 10-104 P. 7

9. "The poor prognostic significance of bacteremia in the course of infections is not at all due to multiplication of bacteria in the circulation but stems from its usefulness as an index of failure of localization of the infectious process in extravascular tissues, allowing spread and entry into the blood stream." I. Bennett; *loc. cit.;* P. 7

Time Relationship

10. "The time relationship between bacteremia and chills is important to bear in mind. Following release of microorganisms into the blood, there is ordinarily a *lag-period* of 1 to 2 hours before the chill and rise in temperature begin. Because bacteria are usually cleared from the circulation very rapidly, the blood can become sterile long before the onset of the rigor and blood cultures obtained during a chill are often misleadingly negative." I. Bennett; *loc. cit.;* P. 7

11. "Despite a widespread tendency to regard bacterial invasion of the blood in endocarditis as consisting of irregular spurts and showers of organisms occurring when valvular vegetations break off, bacteria appear to enter the circulation at a constant rate." I. Bennett; *loc. cit.;* P. 10

12. "It is striking that there is practically no middle ground in obtaining positive blood cultures; the situation in most cases is either that the causative organism is easily obtained or else consistently negative results greet even the most intensive efforts. Cultures are often all positive or all negative; intermittently positive cultures are uncommon. After reviewing the available evidence on delaying therapy in bacterial endocarditis, Finland concluded that a short waiting period does not impair the end result in uncomplicated cases. It can be stated with a fair degree of certainty that the length of this delay should not exceed 5 days and that an even shorter period may be optional." I. Bennett; *loc. cit.;* P. 10

13. "Because of the possibility of infection with anaerobic or microaerophilic strains, thioglycollate broth should always be inoculated at the same time aerobic cultures are made. This is particularly important on gynecological services. The practice of making agar pourplates at the bedside is certainly acceptable, but the writer has not been impressed

with its usefulness and it unquestionably makes the taking of cultures more tedious and time-consuming." I. Bennett; *loc. cit.;* P. 10

Arterial Blood Suggested

14. "When ordinary venous blood cultures show no growth, the suggestion to obtain arterial blood is sometimes made. Despite occasional statements advocating this procedure, the balance of clinical and experimental evidence indicates that there is no removal of bacteria as blood circulates through the upper extremities. Consequently, blood from the antecubital vein is as likely to contain organisms as is blood from the femoral or brachial arteries." I. Bennet; *loc. cit.;* P. 11

15. "The characteristic lag-periods between entrance of bacteria into the circulation and the occurrence of chills has been mentioned. Consequently, in patients with intermittent chills or with spiking fever without rigors, blood for culture should be drawn during the hour or 2 preceding an expected temperature rise." I. Bennett; *loc. cit.;* P. 11

16. "The preceding discussion of bacteremia in endocarditis makes it evident that a schedule for diagnostic blood sampling in this disease consisting of 2 to 4 cultures at covenient intervals during each day is fully adequate and far more reasonable than the practice of taking cultures at intervals of 1 to 2 hours around the clock which is often advocated in a mistaken effort to "catch the organism."" I. Bennett; *loc. cit.;* P. 11

17. "It is fairly common to make colony counts from agar plates of blood cultures .... few conclusions can be drawn from colony counts." I. Bennett; *loc. cit.;* P. 11

Bone Marrow Culture

18. Occasionally, *bone marrow culture* gives results superior to those obtained from peripheral blood. This is likely in typhoid after the first week, in some cases of brucellosis and subacute endocarditis, and in histoplasmosis. The advantage of marrow culture in these diseases may be due to the survival of the causative organisms in macrophages of which marrow is a rich source." I. Bennett; *loc. cit.;* P. 11

19. "Meningococci can sometimes be demonstrated in smears of tissue juice (not capillary blood) obtained from skin lesions. The lesion should be squeezed between thumb and forefinger and then punctured with a sharp blade to obtain fluid for smear and culture." I. Bennett; *loc. cit.;* P. 11

20. "In rare instances, direct observation of a stained smear of peripheral blood or buffy coat reveals organisms. This is commoner in meningococcemia than any other disease and should always be attempted." I. Bennett; *loc. cit.;* P. 11

21. "Although it is often said that bacteremia accompanying hemolytic streptococcal infections can produce severe anemia due to hemolysis, it is obvious from the lack of signs of rapid blood destruction, such as icterus and hemoglobinura, that this statement is in error. Jaundice occurs in some staphylococcal and Salmonella bacteremias but the bilirubinemia results from toxic hepatitis rather than from any hemolytic action of the causative organisms." I. Bennett; *loc. cit.;* P. 12

Erroneous Idea

22. "In disseminated infections due to *Clostridium welchii,* invasion of the blood stream is characterized by rapid development of icterus, hemoglobinuria, and severe anemia; the development of this clinical picture should suggest the possibility of such an infection." I. Bennett; *loc. cit.* P. 12

23. "Another erroneous idea that is widespread relates to the possibility of producing meningitis by performing lumbar puncture upon a patient with bacteremis." I. Bennett; *loc. cit.* P. 12

24. "In some patients with Laennec's cirrhosis, there occur spontaneous bouts of bacteremia caused by organisms which are normal inhabitants of the intestine, usually the colon bacillus. Although this type of bacterial invasion of the circulation is usually regarded as a rarity, the writer has been impressed with its frequency when it is searched for." I. Bennett; *loc. cit.;* P. 13

25. "Contrary to statements which advocate the immediate administration of antibiotics *intravenously* if bacteremia is present, therapy should always be directed at the primary focus of infection in the tissues. Bacteremia is simply an indication of spreading infection and, as has been detailed above, the blood itself is endowed with enormous powers of defense." I. Bennett; *loc. cit.;* P. 13

Clinical Notes From Grand Rounds

These notes are abstracts of opinions expressed by staff members during case presentations at the Friday Grand Rounds of the Pratt Diagnostic Clinic — New England Center Hospital.

Cobalamin (Vitamin B_{12}) may be made radioactive by using radioactive cobalt (CO^{60}). This substance has been found to be quite useful in the diagnosis of pernicious anemia. In normal individuals, cobalamin is absorbed from the gastrointestinal tract and stored in the liver; when the radioactive material is used, it may be detected by using a Geiger counter over the liver. In pernicious anemia there is no uptake from the gastrointestinal tract, and the counter detects no radioactivity over the liver. In pernicious anemia, radioactive cobalamin appears in high concentration in the feces and in very low concentration in the urine; when intrinsic factor is given, these determinations become normal, and radioactivity may be detected over the liver. There is no defect in absorption of cobalamin in the pernicious anemia of pregnancy. In sprue, following oral administration, there is a high content of cobalamin in the stools, but this cannot be restored to normal by the addition of intrinsic factor.

Truths and Concepts Concerning Orthopaedics

By Morton H. Leonard, M. D., El Paso

This represents a departure from Dr. Babey's conduct of his column in that he has invited guest columns. Other physicians are invited to submit collections of aphorisms on Medical Subjects.

1. Treat shock first.

2. The abdominal distention accompanying fractures of the vertebral body is usually, but not always, a paralytic ileus.

3. A compound fracture is sensational; a ruptured viscus can be lethal.

4. The urethra or bladder can be ruptured in the presence of only a minimal pelvic fracture.

5. The trauma which causes a disruption of bony continuity sometimes causes a disruption of neural and/or vascular continuity.

6. Thrombembolic phenomena are common in fractures in and about the pelvic girdle.

7. A rise in pulse not paralleled by a commensurate rise of temperature may mean shock or a "gas infection."

Gas Bubbles

8. Gas bubbles in the tissue are not always due to "gas gangrene."

9. Pain in the suboccipital region on opening the mouth may indicate upper cervical spine pathology.

10. If the jaw swings to one side as the mouth is opened look for pathology in the temperomandibular joint on the side to which the mandible "points."

11. Negative x-rays do not rule out a significant injury to the neck.

12. A negative x-ray does not rule out metastasis to the skeleton.

13. A negative x-ray does not rule out an early fatigue fracture.

14. Neck pain may have its origin in the shoulder.

15. Shoulder pain may have its origin in the neck.

16. Primary subdeltoid bursitis is unusual.

17. Anti-biotics will not penetrate "dead bone."

Two Weeks Behind

18. X-ray findings in osteomyelitis lag two weeks behind the pathologic anatomy.

19. Dead tissue is an excellent culture medium.

20. Non-specific pus "dissolves" hyaline cartilage.

21. A negative x-ray and a normal sedimentation rate do not rule out an early ankylosing spondylitis.

22. The patient with bone and joint tuberculosis has a systemic illness.

23. The patient with recurrent renal calculi may have hyperparathyroidism.

24. The patient with recurrent renal calculi may have hyperuricuria.

25. In the patient with Vitamin D resistant rickets check the kidneys for abnormality.

Hip Deformities

26. Congenital hip deformities are far more common in the female.

27. Competent treatment of congenital dislocation or subluxation of the hip prior to the age of one year usually results in an excellent hip.

28. Treatment of congenital dislocation of the hip after the age of two years rarely produces an excellent hip.

29. Progression of idiopathic soliosis stops at the time of sexual maturity.

30. To diagnose minimal slipping of femoral capital epiphysis one must have a lateral as well as an AP x-ray.

31. Most children age two to seven years are slightly knock kneed.

32. Most children are "flat footed" to the age of 24 months.

33. If subastragular motion is diminished rule out a congenital fusion in the hind foot.

Easiest Treatment

34. The easiest treatment for a bunion is a wide shoe.

35. A flat foot is not necessarily a painful foot.

36. No cast gives complete immobilization.

37. All wrist sprains are fractures of the carpal scaphoid until proven otherwise.

38. "Edema is [joint] glue," Watson Jones, Reginald: Fractures & Joint Injuries, Vol. 1, Baltimore, 1944, Williams & Wilkins Co.

39. The most common residual disability from Colles' fracture is stiffness of fingers and/or shoulder.

40. Epiphyseal separations of the shearing type only rarely cause growth disturbances; those of the impacting type commonly do.

41. Most "discs" get well on conservative management.

*I am grateful to Dr. Leonard for his contribution. He wishes it understood that these aphorisms are not original with him. He can vouch, on the basis of personal experience, for their reliability. — Andrew M. Babey, M. D.

The Use of Chemotherapy as an Aid to Hemorrhoidectomy Convalescence

By H. D. Cogswell, M. D., E. W. Czerny, M. D., and W. A. Soland, M. D., Tucson, Arizona

We feel that any means of decreasing the post-operative pain and hastening the convalescence after a hemorrhoidectomy should be brought to most surgeons' attention. This operation has a bad reputation with the general public. It isn't that the operation is unsuccessful or the end result unsatisfactory, but the average post-hemorrhoidectomy patient talks little of his eventual relief of symptoms.

More often he indoctrinates his listening audience in the discomforts and horrors of the "getting well" period. Certain complications such as prolonged healing, post-operative fissures, stenosis, and the varying complaints of the patients have made many surgeons dislike the operation. Because of the self-advertised discomfort of hemorrhoidectomy patients, many individuals needing the operation have avoided operative procedures, either patronizing quacks or suffering needless disability.

Varying Success

The injection of long lasting anesthetics and the application of various ointments and lotions have been recommended to alleviate post-operative pain. These have had only varying success, certainly not with enough constant relief to find them universally adopted.

In observing a number of patients who had very little post-operative pain and a rapid convalescence, we were interested to find that in most of these cases the operated areas were clean without evidence of gross infection. Those with a longer and more painful convalescence showed redness, swelling, and a purulent drainage in and around the rectal wounds.

From this observation, we concluded that if hemorrhoidectomy wounds could be protected from gross infection, the healing period would be more comfortable and shortened. For this reason, a pre-operative regimen was started, using chemotherapy as an intestinal antibacterial agent three to four days before hemorrhoidectomy.

Results Good

The chemotherapeutic agents, usually sulfathaladine or sulfasuxidene, were continued during the healing period. In 1954 (1) the results of our first seventy cases who had been placed on this regimen were reported. At that time the results were good, with a much less painful post-operative period and a shorter healing time. We have continued this procedure and are further convinced that our results are as good as, or better than, we originally reported.

We have followed no specific criteria in measuring the good our patients have received from the pre- and post-operative administration of chemotherapeutic drugs.

More Comfort

It has been observed, however, that in addition to a much greater degree of post-operative comfort and a return to their occupations in a much shorter period of time, these patients require less narcotics and catheterizations, and had fewer post-operative complications. Our method of hemorrhoidectomy and the type of patient have not changed to account for the improvement in our post-operative results.

There have been few instances of drug sensitivity, and when these have occurred we have varied the drug used, antibiotics being substituted. In most operative cases we have found healing to be complete in three weeks and believe that our hemorrhoidectomy patients are healing more comfortably and rapidly because of the addition of chemotherapy to control wound infection.

(1) Cogswell, H. D.; Czerny, E. W.; Fritz, J.; The Use of Chemotherapy as an Adjunct to Healing following Hemorrhoidectomy. Arizona Medicine, Volume 11, No. 5, Page 169, 1951.

Speakers Announced for Meeting of Ob-Gyn Academy in Tucson

Speakers for the annual meeting of District 8 of the American Academy of Obstetrics and Gynecology have been announced by Drs. H. S. Rhu, Jr., and L. D. Sprague, both of Tucson and co-chairmen of the meeting, which will be held April 9-11 in the Pioneer Hotel in Tucson.

Among speakers at the session will be:

David Figg, M.D., Seattle.
Chester L. Roberts, M.D., Glendale, Calif.
Robert Hall, M.D., Salt Lake City.
John Brougher, M.D., Vancouver, Wash.
Don de Carle, M.D., San Francisco.

Approximately 200 doctors and their wives are expected to attend.

Dr. R. Glenn Craig of San Francisco, chairman of District 8 will open the meeting with an address at 9:30 a. m. April 9.

An honored guest will be Dr. Ralph E. Campbell, professor of obstetrics and gynecology at the University of Wisconsin School of Medicine, who is president of the American Academy of Obstetrics and Gynecology.

"Fun in the Sun and Science in the Shade" will be the slogan for the meeting. This slogan was devised by Donald Richardson of Chicago, executive secretary of the American Academy of Obstetrics and Gynecology, who also will attend the meeting.

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

FREDERICK P. BORNSTEIN, M. D., EDITOR — CASE NO. 542
PRESENTATION OF CASE BY DR. BRANCH CRAIGE

History — Dr. Nathan Kleban

A 31-year-old unmarried Latin-American cardiac clinic patient entered El Paso General Hospital for her 12th admission on September 4, 1955.

The mother's pregnancy and the patient's birth and neo-natal histories were not recorded. She was said to have had measles, whooping cough, a back injury, rickets, and Pott's disease in childhood.

In 1937, at the age of 12, the patient was first seen at an El Paso General clinic, with the notation "no diagnosis." Epistaxis attributed to chronic rhinitis brought her to the clinic in 1939. For this, she was hospitalized in 1941, discharge diagnosis being epistaxis, Pott's disease and rheumatic mitral stenosis. There was no record of cyanosis. No statement was found in the chart as to when cyanosis, which was intermittent, first appeared and as to what events it was related.

Rapid Heart

Not until January, 1949, was she seen again, when she was admitted for complaints of a "bad heart for a long time," ankle swelling, orthopnea, paroxysmal nocturnal dyspnea and rapid heart beat for one month. There were severe kyphoscoliotic deformity of the thoracic spine, pigeon breast, cyanosis of the finger nail beds, spooning as described by one examiner and "chronic pulmonary osteoarthropathy" by another. Rales, liver enlargement and edema were not present. One examiner described the heart as enlarged to left and right, having a loud whistling systolic murmur heard at all valve areas, and a deep rough diastolic murmur loudest over the aortic but also heard over the pulmonic area. Another examiner described the murmur as "machinery like" over the precordium.

Two Diagnoses

The R. B. C. was 5.5 million, Hb. 91 per cent, Kline negative, as it was on all subsequent admissions, zero erythrocyte sedimentation rate, and trace of albumin in the urine. Electrocardiograms: Sinus tachycardia. Cardiac fluoroscopy and chest film: "Marked left ventricular hypertrophy with moderate generalized cardiac enlargement. The aorta was not transposed. The very marked scoliosis of the spine makes it impossible for a definite diagnosis as to type of heart disease, but it is likely that tetralogy of Fallot does not exist." A hilar dance was not observed. The patient was digitalized. Discharge diagnosis was "congenital heart disease with interventricular septal defect."

Because of "palpitation, weakness, turning purple and dizziness", the patient was readmitted in March, 1949. Blood pressure 130/80. Mild cyanosis of the lips and finger nail beds with finger clubbing were described. Deformities of the legs including the pes cavus were noted. There was a high pitched systolic murmur over the entire precordium but no diastolic murmur. A2 was rough and prolonged. Discharge diagnosis was "congenital heart disease with dyanosis tardive."

Fourth Admission

Fourth admission for oxygen therapy to relieve cyanosis occurred one month later. Diagnosis: Congenital heart disease, incompletely diagnosed.

The patient was followed in the cardiac clinic in 1949. She was said to have "hysterical seizures." Because of a persistent heart rate above 100, thiouracil was prescribed for a possible hyperthyroidism, but later discontinued. There were B.M.R.'s of plus 71 and plus 3. On one occasion, the patient was said to be fibrillating and on others premature ventricular systoles were noted. On one clinic visit the examiner heard a systolic murmur loudest in the third left intercostal space and a diastolic murmur, location not specified. Digitalis and phenobarbital were prescribed.

Fifth Admittance

For the next three years the patient was not seen at El Paso General Hospital. In June, 1953, she was admitted for the fifth time, complaining of shortness of breath, abdominal cramps, chest pain, and inconstant ankle swelling. B. P. 110/70; P. 150 regular with premature systoles. Rales were heard. The heart was thought to be enlarged to right and left by one examiner, who described systolic and diastolic murmurs. A consultant thought the right ventricle was enlarged, described a high pitched systolic murmur maximal in the third and fourth intercostal spaces 5 cm. to the left of the sternum.

Liver was not enlarged, edema not present. Hb. 16.2 grams, R.B.C. 5.2 million, W.B.C. 6900, blood urea nitrogen 11 mg. per cent. Urine 1,025, negative. Chest films: "Kyphoscoliosis with convexity to right in upper portion. No cardiac enlargement. Intensification of pulmonary markings. Findings consistent with congestive failure, old acid fast spondylitis and kyphoscoliosis". The patient was digitalized, and six days later a repeat chest film was interpreted as demonstrating improvement of the congestive failure.

Diagnoses

The P waves in leads one and two were slurred on electrocardiogram. Diagnoses were "Kyphoscoliotic pulmonary heart disease and possible congenital heart disease".

Admission in December, 1953, was for "heart pain and dizziness". Hb. 16.2 grams; blood urea nitrogen 22.5 mg. per cent; P. S. P. excretion 43 per cent and 60 per cent in 2 hours; trace of albumin and hyaline and granular cysts in the urine. The patient was sedated and given mercurial diuretic.

Wheezes and Rales

During 1954, weight varied between 74 and 78 pounds. Blood pressure varied between 160/130 to 120/90. Wheezes and a few rales were heard. A grade IV systolic murmur over the entire precordium and a diastolic murmur at the apex, were described. The liver was not felt and there was no edema. Hb. 16.7 grms.; urine 2 plus albumin, 1,024; B. U. N. 10 mg. per cent, Demerol, Raudixin and an antibiotic were administered. In October and November, the patient was admitted with complaints of "heart attacks." A chest film was reported as demonstrating "no significant change." The usual diagnosis was "Kyphoscoliostic heart disease". On one admission, there was a second final diagnosis of "hypertension".

On clinic visits during 1955, weight was 79-80 pounds, blood pressure not recorded, and no evidence of congestive heart failure noted. Medications were: Thorazine and Raudixin.

Tenth Admission

Tenth admission was in January, 1955. Blood pressure was 100/80, systolic and diastolic murmurs were heard over the entire chest; heart size was indeterminate because of chest deformity; liver was not felt; and there was no edema. Urine: one plus albumin and granular casts. The house staff complained of the patient's demand for enemas and refusal to expel them.

In June, 1955, the patient was admitted because of menorrhagia. Pelvic examination was not remarkable. Bleeding ceased after estrogen was given. A systolic murmur loudest at the base and a diastolic murmur loudest at the apex were described. Blood pressure was 120/80. Other medications were penicillin, digitalis and sedatives. Diagnoses were Kyphoscoliotic and rheumatic heart disease with mitral stenosis.

The patient entered the hospital on September 9, 1955, for the twelfth and final admission for reasons not found in the record.

There was neither family nor past history of rheumatic fever.

Physical Examination

T. 99.4, P. 110, B. P. 130/90, wt. 80 lbs. State of nutrition was poor, skin pale, lips and finger nail beds were cyanotic. One examiner heard rales at the lung bases, another did not. There were premature systoles. Liver was not felt. There was no edema.

Hospital Course

The patient appeared to be in no respiratory distress during most of her hospital stay. She complained of headaches, chest pains, abdominal cramps, nausea, vomiting, and inability to sleep. Temperature was not elevated except on two occasions, when it was 100 and 101 and rose to 104 on the day of death.

She demanded medications and injections, cried for her mother, screamed at night, and was transferred to the Annex when she was disturbed by vision of a legless man and threatened to jump out the window.

On the 20th day in hospital, two plus ankle edema was noted. Generally the patient ate in the dining room, watched TV, went to the phone to call her mother, and demonstrated no striking changes until the 35th hospital day.

She was found to be dyspneic, cyanotic, without detectable blood pressure. There was periorbital but not pedal or other edema described. Oxygen, aminophylline, Levophed, and I-V Cedilanid were administered.

Consultant's Note

A consultant's note stated: "Patient was terminal without blood pressure and a tachycardis of 160, occasional PVC, Pulsus alternans 140-120. Prognosis poor".

Blood pressure rose to 140/100. On the 36th day there was cyanosis if oxygen was stopped, agonal breathing, bubbling rales, and bloody emesis. Blood pressure was 110/160 with levophed. Bowel sounds were absent.

There was abdominal distention, coffee-ground vomitus. Wangensteen suction was instituted. The patient died in an oxygen tent on the 37th day.

Additional medications given were: Phenobarbital, A.P.C., Chloral hydrate, Thorazine, Nembutal, Seconal, Demerol, Raudixin, Dormison, Memphate, Benadryl, Serpasil, Moludar, Diamox, Penicillin, Mercuhydrin, and Achromycin.

Laboratory

X-Ray Oct. 10, 1955: Chest film, portable. "Chest not diagnostic due to the condition of patient."

Lab. Sept. 4, 1955: Hb. 14.2 grms.; RBC 4.36; WBC 9150; Stabs 2, Segs 81, lymphs 13; monos 4.
Urinalysis: Yellow, acid, 1,005, albumin 2 plus, Sugar Negative, WBC 3-5/HPF
KLINE Exclusion negative
Erythrocyte Sedimentation rate 4 M M/hr.

EKG Sept. 28, 1955: Sinus tachycardia with frequent ventricular premature systoles. Tall peaked P waves in Lead II. Horizontal heart, slight left axis, T waves low. "ABNORMAL record suggesting myocardial damage."
Oct. 9, 1955: Sinus tachycardia, PVC's, P tall and peaked in II.

X-Ray Discussion — Dr. Vincent M. Ravel

Three or four examinations of the patient show a tuberculous spondylitis with a marked Kyphoscoliosis. The problem of evaluating a cardiac silhouette with as much deformity as this is considerable. On one occasion, it was stated that the heart shadow was enlarged, and on another occasion it wasn't. I do not believe there is any significant cardiac enlargement.

I think what has happened is that the deformity of the chest makes for a greater ratio between the cardiac silhouette and the general space within the chest cavity. It makes it look like a relative cardiac enlargement; yet, actually I do not think that the heart shadow is significantly enlarged. I think it is a matter of having less chest space.

Difficult Problem

The problem of congenital heart disease is, I think, rather difficult to evaluate, but I do not believe again that this is a congenital heart. Circulation depends, of course, to a certain extent upon the ability of the diaphragm to produce a satisfactory negative pressure in the chest which, in turn, causes a considerable assistance so far as return blood flow to the heart is concerned.

Here we have a problem of limitation of motion of the diaphragm with an additional hemodynamic strain. The changes that we see definitely are the tuberculous spondylitis, and I believe that there will be considerable right heart enlargement as compared with the left ventricle.

Final Film

The final film that we see was taken when the patient was in extremis and I am sure that there must have been evidence of considerable congestive failure, filling up of the left chest cavity with a pleural effusion. The problem of a tuberculour pericarditis with constriction must be considered in view of the original lesion of the tuberculous spondylitis.

Differential Diagnosis — Dr. Branch Craige

I want to start out by thanking Dr. Kleban for a good summary of a very long record. I don't intend to thank Dr. Bornstein for picking this particular case, though.

This women had ten admissions to the hospital, during which time observations were recorded, I presume, by a score or more of observers, many of which Dr. Kleban has incorporated here so that we have observations pro and con for almost any diagnosis we would like to choose.

The problem, of course, the big problem, is what kind of heart disease, if any, did she have? On various admissions to the hospital, she had diagnoses made of Kyphoscoliotic heart disease, mitral stenosis, and of congenital heart disease, the type of which was not specified.

Other Diagnoses

Let's leave the discussion of the heart disease to the last, and dispose first of a number of various other diagnoses and possible diagnoses which are suggested by the record. The diagnosis of Pott's disease was fine. I think we should accept that. She is said to have had a back injury and rickets in childhood. We are unable to corroborate those. We will accept those at their face value.

At one place in the records it is mentioned that she had pes cavus deformities of the feet, which raises a question of whether instead of a tuberculous spondylitis, she might have had one of the muscular dystrophies with damage to the feet and the chest at the same time. I don't think the information available is enough to do any more than speculate on that score. I think we will have to accept the diagnosis of Pott's disease. However, chest deformities like this can occur in some of the myopathies.

Epistaxis Mentioned

Epistaxis is mentioned, and that, of course, raises the suggestion—epistaxis, that is, in childhood—of rheumatic fever, of rheumatic heart disease. A renal lesion is suggested by the appearance of albumin and casts in the urine at one time, an elevated B. U. N. — slightly elevated — 22 — but later it went down to 11. Hypertension is noted in one spot and subsequent blood pressures were recorded as normal. However, it didn't specify whether the normal blood pressures were recorded when she was under the influence of Raudixin. Can you tell me?

Answer — Blood pressures were normal with and without Raudixin.

Dr. Craige: Blood pressures were normal with and without Raudixin. I would be inclined to discount the importance of the isolated hypertensive readings. She had menorrhagia at one time, relieved by estrogens, which I would interpret in the absence of any other findings as not significant. She was thought at one time to have hyperthyroidism, the only evidence for which is a single BMR plus 71, and a nervous disposition. I think that we do not have enough evidence to corroborate that diagnosis.

Psychotic Symptoms

In her last admission, she developed psychotic symptoms, but that was at a time when she was pretty sick, and I would suggest that the psychotic symptoms were probably due to a sympotmatic psychosis.

Now, we come to "What kind of heart disease does this woman have?".

First, with regard to rheumatic heart disease, the one murmur that everybody agreed on was that she had a loud systolic murmur all over the precordium. A diastolic murmur was recorded on some occasions at or near the apex—or wherever the apex might have been thought to be—and with the history that I have mentioned previously, rheumatic heart disease and mitral stenosis were mentioned.

Left Axis Deviation

However, this girl had left axis deviation on the electrocardiogram. Going by the records, at least, on fluoroscopy the left ventricle was thought to be hypertrophied. There was no significant evidence of ventricular enlargement and my feeling would be that she did not have rheumatic heart disease.

Congenital heart disease was diagnosed on some occasions. That would have to be either cyanotic or not cyanotic or potentially cyanotic. Well, now, with regard to the cyanotic congenital heart diseases, this girl did not have any right ventricular hypertrophy. There was no right axis deviation in the cardiogram. She was not constantly cyanotic. I think there is no evidence of her having a cyanotic congenital lesion.

Patent Ductus

Of the non-cyanotic lesions, I need not go into them because I think there is little evidence for them, except for the question of a patent ductus. One of the doctors thought at one time she had a "machinery-like murmur" over the base of the heart. Patent ductus, however, shouldn't make her cyanotic.

Of the potentially cyanotic lesions, septal defects and perhaps patent ductus and pulmonic stenosis should be thought of. This girl apparently developed cyanosis from time to time without any marked respiratory distress at the time that the cyanosis ocurred. I would be inclined to think that she did not have any congenital heart disease.

Kyphoscoliotic Heart

Now that leaves us with kyphoscoliotic heart disease, and I don't see any reason why all of the signs and symptoms which this girl presented could not fit into that diagnosis. She did have, obviously, a severely deformed chest. The cardio-thoracic ratio is altered, but I think it is the thoracic end of the ratio that is altered rather than the cardiac.

Shrunken Chest

I think she has a normal sized heart and a shrunken chest. The left axis deviation would make one suspect that maybe this diagnosis is wrong, but in severe Kyphoscoliosis you can get right or left axis deviation. You can get left ventricular hypertrophy and/or right ventricular hypertrophy. She had cyanosis from time to time but cyanosis could occur due to the fact that segments of the lung remained atelectatic and I presume that the blood that flows through those atelectatic areas is fully oxygenated.

She did have club fingers, or at least she had some abnormality of the fingers. Kyphoscoliotic patients often have bronchiectasis. We don't have definite evidence for it in this case but she may well have had it and I don't think that the club fingers would make for any doubt as to the diagnosis.

With right scoliosis as this girl had, the heart is displaced to the left and left axis deviation of the cardiogram is not inappropriate.

Biggest Problem

Now, with regard to the murmurs. The biggest problem, apparently, and the biggest reason for suspecting some other kind of heart disease in this girl, was the fact that she had variously described diastolic murmurs. In Kyphoscoliotic heart disease, the auscultation of the heart is interesting, but useless so far as the differential diagnosis goes, because murmurs may be systolic or they may be diastolic.

I believe they may be heard at any position in the chest and they have lost their significance so far as determining vascular lesions. So, I think that in this 31-year-old girl the choice would be to make as few diagnoses as possible.

I think she has Kyphoscoliosis and I think she has Kyphoscoliotic heart disease, so-called, which is really not disease of the heart at all, but an inadequate chest area, and her terminal event, namely, going into rather rapid and profound and very abrupt ending is characteristic for patients with Kyphoscoliosis, because once failure occurs in such patients, the progress is extremely rapid.

Dr. Appel:

One of the things that wasn't emphasized in the protocol was the — well, I'm no psychiatrist, but she had a severe, I would say, psychosis, associated with this condition. That is one of the reasons why she received Raudixin and Thorazine and barbiturates. In fact, I'm pretty sure she was addicted to some of those drugs, from the remarks Dr. Logsdon made.

I only examined her on the last night of her illness and at that time she was terminal in the Annex and we even got an EKG to see if it would help us, but it didn't make much difference.

Clinical Diagnosis:

Kyphoscoliotic heart disease?
Rheumatic Heart disease?

Dr. Branch Craige's Diagnosis:

Kyphoscoliotic heart disease.

Pathological Diagnosis:

Kyphoscoliotic heart disease. Patent inter ventricular septum, membranous portion.

Pathological Discussion — Dr. Bornstein

The autopsy was performed by Dr. Rita Don, and I am following the protocol. The external examina-

tion showed a small kyphoscoliotic woman, extremely cyanotic, with club fingers. Each pleural cavity contained 100 ccs. of fluid. The pericardial sac contained 500 ccs. of fluid. The heart weighed 480 grams. The right ventricle measured 8, the left ventricle measured 15 mm. in thickness. This represents hypertrophy of both ventricles. In addition, there was a large defect in the interventricular septum which was located in the membranous portion. (Fig. 1.)

Lungs and Liver

The lungs weighed 300 grams each. The liver weighed 940 grams. The remaining organs were not remarkable.

In the interpretation of these findings, it is easy to overvalue the importance of the septal defect for the development of the clinical picture. I think this woman died of Kyphoscoliotic heart disease for the following reasons:

Probable Consequences

What are the probable consequences of a septal defect in this particular case? To me, it means that the left ventricle in contracting throws some arterialized blood back into the pulmonary circulation. This is a mechanism similar to mitral insufficiency. Yet, this woman did not die the death of a mitral insufficiency.



Figure I

There was no cardiac dilatation. Especially, there was no brown induration of the lungs. I think the septal defect is a contributory cause of death and offers an explanation for the very confusing cardiac murmurs that were heard during the course of the disease.

Cause of Death

Death here is due to Kyphoscoliotic heart disease. In those cases of septal defect where death occurs as a consequence of the defect, the disease usually becomes complicated by a super imposed infection with the development of an endocarditis lenta. They do not die of decompensation.

In summary, then, this was a patient who died after a long chronic Kyphoscoliotic heart disease with symptoms which were confusing due to the presence of a septal ventricular defect.

Dr. Blanchard Elected President of San Miguel County Medical Society

Las Vegas, N. M. Dr. J. J. Johnson, Jr., has returned from the University of Colorado at Denver, where he attended one week of intensive study in general medicine and surgery.

Dr. Junius A. Evans and his wife have returned from Mazatlan, Mexico after a month's stay. On December 7, he had an attack of coronary thrombosis and his physicians advised a three months rest from his busy practice.

Dr. Volney S. Cheney has recently resigned as secretary and treasurer of the San Miguel County Medical Society after serving many years in that capacity. Dr. Cheney is 81 years young and is still very active in public school practice.

Dr. Charles L. Blanchard was recently elected President of the San Miguel County Medical Society. Dr. Blanchard is also the President of the Shrine Club of Las Vegas and Chairman of the Under-privileged Children's Committee of the local Kiwanis Club.

General Practitioner Training In Proctology

Post-graduate courses are listed annually in the J.A.M.A. and in the American Journal of Proctology. Regular reading of the American Journal of Proctology will bring the basic literature on both ano-rectal and colon proctology to the physician.

The International Academy of Proctology offers annual teaching seminars, and quarterly state chapter meetings, all without registration fee. The general practitioner is cordially invited to attend these meetings, and to take an active part in the discussions. The Eighth Annual Teaching Seminar of the International Academy of Proctology will be held in Chicago, April 23 - 26th, 1956, at the Drake Hotel.

MEETINGS

New Mexico Medical Society Announces Speakers for Annual Meeting in Roswell

The seventy-fourth annual session of the New Mexico Medical Society will be held in fast growing Roswell, metropolis of Southeast New Mexico, May 2, 3, and 4.

Guest speakers for the session will be:

Carleton B. Chapman, M. D., Internist, Dallas.

John H. Moyer, M. D., Internist, Houston.

Ian MacDonald, M. D., Surgeon, Los Angeles.

Morris J. Fogelman, M. D., Surgeon, Dallas.

Conrad G. Collins, M. D., Obstetrician and Gynecologist, New Orleans.

Forrest H. Adams, M. D., Pediatrician, Los Angeles.

Dana M. Street, M. D., Orthopedics, Memphis.

Robert D. Moreton, M. D., Radiologist, Fort Worth.

Vernon E. Martens, Capt., MC USN, Maryland.

In addition to the scientific papers there will be two panel discussions. Dr. Collins will moderate the panel on "Acute Anuria" and Dr. Moyer will moderate the panel on "Steriods". All guest speakers will participate on the panels. There will be medical and surgical round-table luncheons on Thursday and Friday.

Friday evening, May 4, has been reserved for meetings of the various specialty groups.

Business Meetings

Business meetings, Council, and House of Delegates of the State Society will be held on Tuesday, May 1, and Wednesday morning, May 2. Details of this phase of the Session will be announced later.

In addition to the scientific program the Chaves County Medical Society, convention host, has arranged a round of social activities, which should help each doctor to relax. Wednesday evening, May 2, has been set aside for the smoker and Thursday, May 3, will be the annual dinner-dance.

Those who care to do some sight-seeing will find the charm of the West in Roswell, which is surrounded by thousands of fertile acres of growing crops and is in the midst of one of the best sheep and cattle range sections of the Southwest.

Carlsbad Caverns

Chief attraction of the Roswell area is world famous Carlsbad Caverns National Park, located 106 miles to the south. To the east is Bottomless Lakes State Park, a unique phenomenon of both scenic and sport interest, where boating, swimming, horse-back riding and picnicking are enjoyed.

To the west, 72 miles, is the famous mountain playground, Ruidoso. The Nation's highest golf course, 9,000 feet, at Cloudcroft, is only 130 miles Southwest of Roswell. Thus, convention participants will have a wonderful opportunity while visiting Roswell to visit some of the most scenic areas of the Southwest.

All physicians who are members of their respective state medical societies are cordially invited to attend.

Room accommodations are available in the Nickson Hotel or one of the many beautiful motels. A list of the motels will be provided in the near future, or write: New Mexico Medical Society, 223-24 First National Bank, Albuquerque.

Dr. Hossley of Deming New President of Southwestern New Mexico Society

Dr. W. J. Hossley, Jr., of Deming, N. M., was elected President of the Southwestern New Mexico Medical Society at its annual meeting in Deming, January 18th, 1956. Other new officers are Dr. C. C. Cobb of Silver City, vice president; and Dr. Sidney F. Baker of Silver City, secretary-treasurer. Dr. J. C. Sedgwick, Las Cruces, N. M., was the retiring president.

Dr. Saul Appel of El Paso presented a paper on "Rheumatic Fever in Pregnancy and Old Age." Also present at the meeting were Dr. Earl Malone of Roswell, N. M., president of the New Mexico Medical Society, and Ralph Marshall, Albuquerque, executive secretary of the New Mexico Medical Society.

The Society voted to hold future meetings in Deming because of its availability to all the component societies. Meetings will be held every four months instead of three as previously, and Deming will be the host Society.



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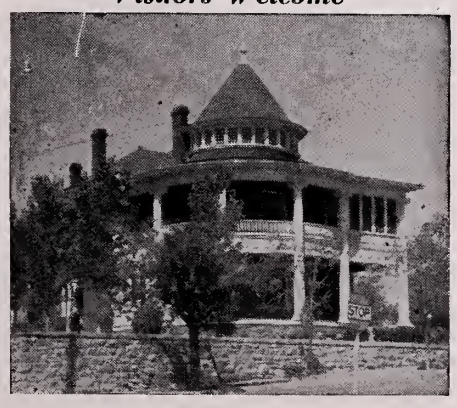
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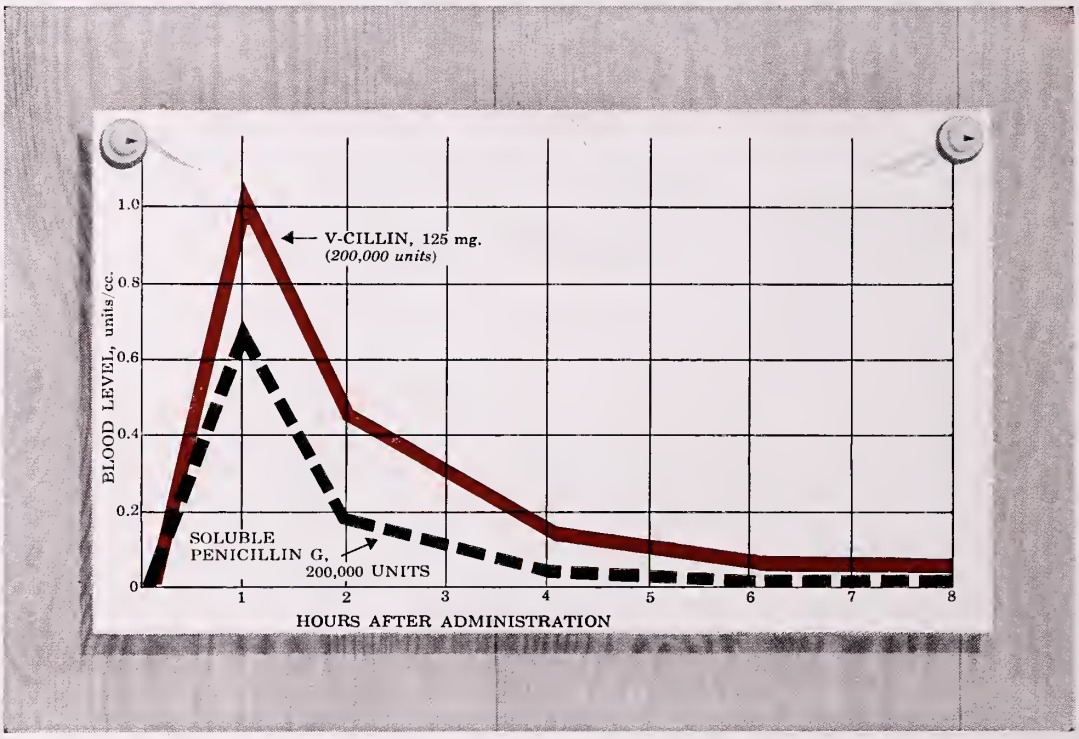
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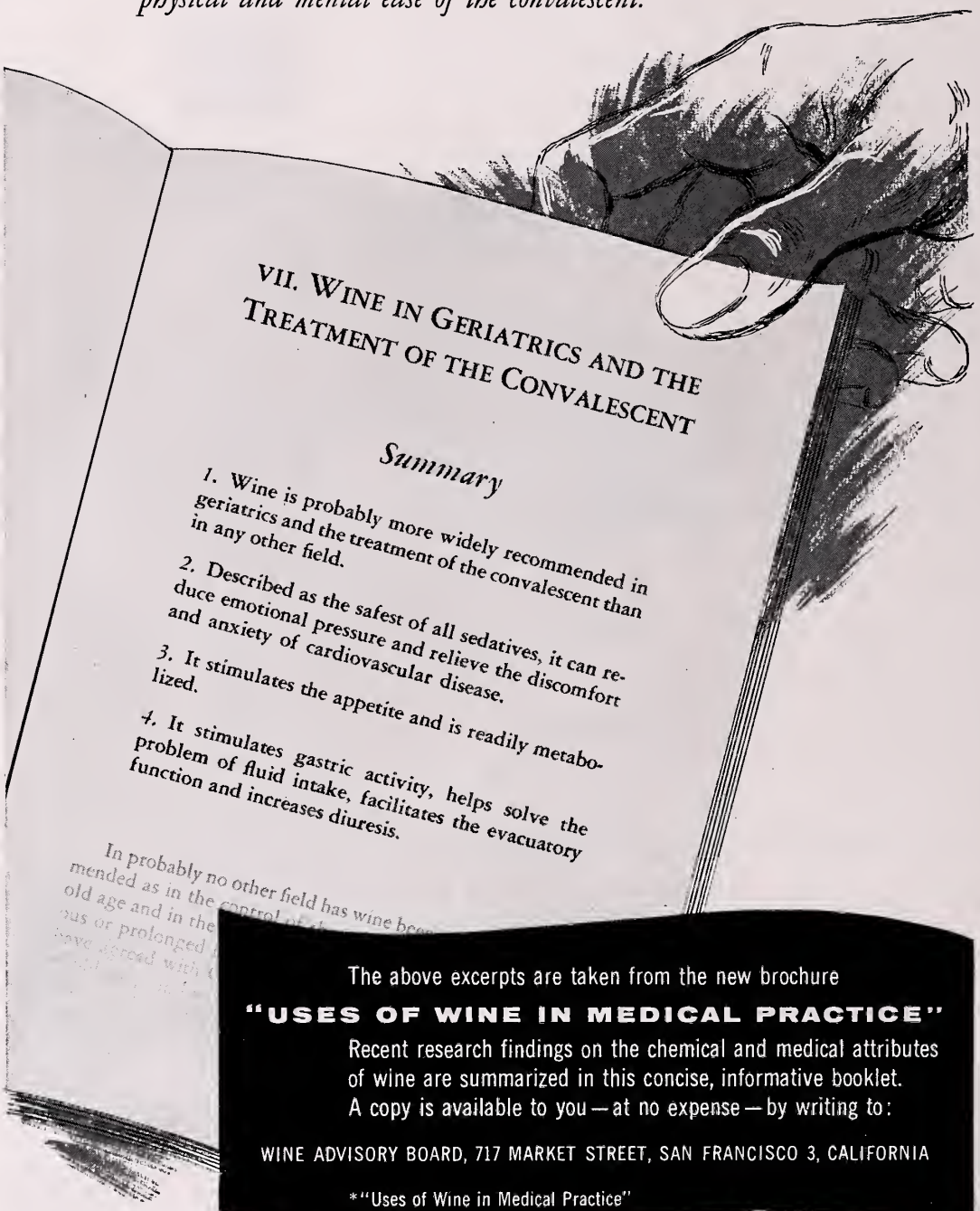
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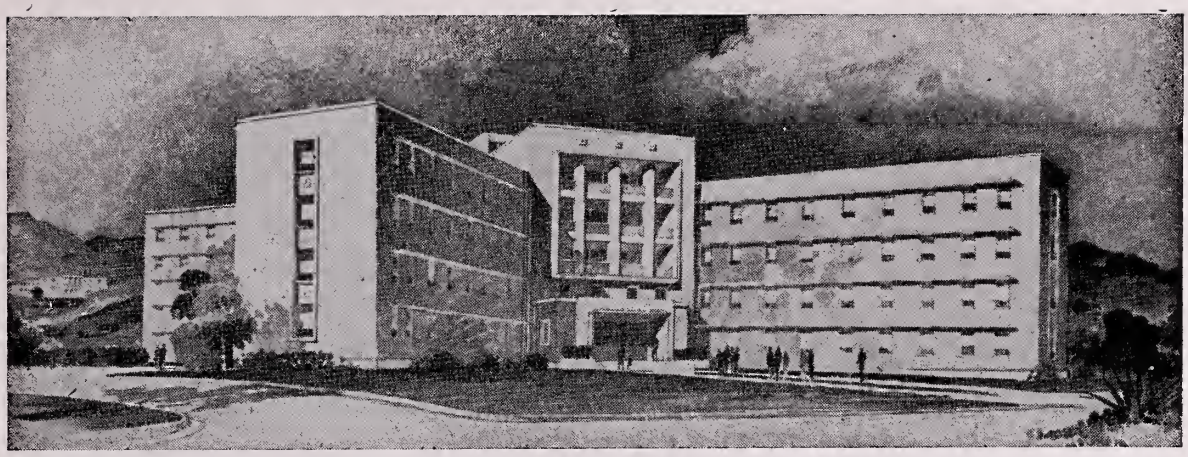
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(1) Zimmerman, F. T.: *New York J. Med.* 55:2338, 1955. (2) Carter, C. H.: *Neurology* 4:935, 1954. (3) Forrer, G. R.: *J. Michigan M. Soc.* 53:275, 1954. (4) Smith, B., & Forster, F. M.: *M. Ann. District of Columbia* 22:279, 1953. (5) Lemere, F.: *Northwest Med.* 53:482, 1954. (6) Davidson, D. T., Jr.: Lombroso, C., & Markham, C. H.: *New England J. Med.* 253:173, 1955.

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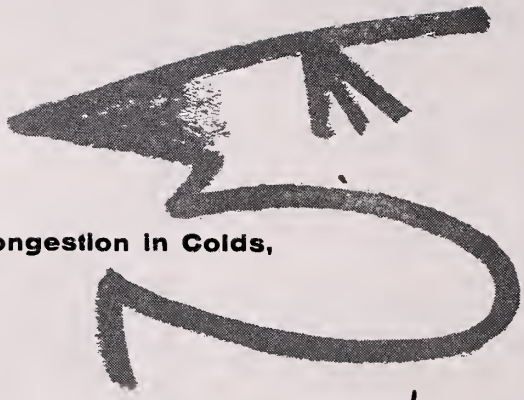
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VOL. XXXVII APRIL, 1956 No. 4

EDITORIAL

The Default of the Private* Practice of Medicine Through Legislation

By Charles E. Oswalt, Jr., M. D., Fort Stockton, Texas

Many of you are already aware of some of the inroads which are today being made on private medicine. These encroachments are coming from many directions. Some of them, unfortunately, undermine the foundation of free enterprise.

There is definite concern with regards to new plans through which the American public is receiving medical service. Not all of these programs have been instituted by the Federal Government. The closed panel plans came into prominence several years ago in California, when Henry Kaiser hired a group of Doctors to provide medical care for his ship builders. The coal industry and the railroad industry are at the present time either in the process of establishing, or have already established such plans for medical care.

Advertising for Patients

Some of these plans actually are advertising for new patients, and are daily enlarging their operations. These are very serious problems which I feel merit your attention. Nevertheless, I believe that it is best to limit the discussion to encroachments upon the private practice of medicine through Federal Legislation. There are three bills which are being considered by Congress which can seriously jeopardize private practice. They are Social Security, Federal Health Re-insurance, and a broadened plan for the care of dependents in the Armed Services. Our concern emerges from the fact that many social planners in Washington will not give up until a Nationalized plan of medical care has been evolved for the American Public.

These threats are continuous; and each one seems to be more serious than those that preceded it. Today there are no proposals which actually carry the label of socialized medicine. Currently, the subtlest and most effective drive for the total governmentalization of medicine is being made, in spurts and lunges, undercover of the Social Security Act.

In 1950 the proponents of governmental medicine found the approach that would work: quit trying to legislate compulsory insurance in one great piece for all of the people; just amend the Social Security Act to bring in a few people at a time.

* Delivered before the Annual Meeting of the Texas District One Medical Association in Pecos.

Greatest Concern

Our greatest concern at the moment is legislation which would make permanent and totally disabled persons eligible to receive Social Security retirement benefits at age 50 instead of 65. Now, of course, this sounds like a fine humanitarian proposal, and you are probably wondering why it has elevated the blood pressure of many doctors.

First of all, there is the tremendous economic consideration which is involved. The offering of monthly benefits to the disabled, at the age of 50, would apply to an estimated 250,000 individuals. The first year it would cost an estimated two hundred million dollars. Within 25 years, approximately one million people would be receiving benefits amounting to $850 million a year.

This would precipitate another rise of Social Security taxes and would further jeopardize the entire program which already is unsound and morally unjust.

Secondly, these payments would represent a definite threat to the effectiveness of the present rehabilitation programs. In substance, if individuals can sit at home and draw cash hand outs from the Government it is doubtful if some of them will be anxious to participate in rehabilitation programs. This proposal would place one more segment of medical care under the jurisdiction of the Government.

Master Plan

Even more important than these objections, however, is the fact that the proposal represents, what we believe, is another step in the master plan for the nationalization of medicine. After cash benefits have been authorized for the disabled at the age of 50, that age limit will be lowered and eventually be eliminated. Next, cash benefits would be given to the dependents of those who are permanently disabled. This undoubtedly would be followed, in a year or so, by a program paying benefits to those who are only temporarily disabled. The next step in this socialistic change would be cash benefits for both hospital and medical care. Ultimately, we fear

that we would be saddled with a full fledged system of government health insurance.

This bill looms as our Number One legislative target. This legislation has been passed by the House and is now in the Senate Finance Committee. Vigorous action will be required by all physicians to defeat this piece-meal nationalization of medicine.

Compulsory Inclusion in OASI

It is entirely possible that Congress may make another effort in 1956, to force physicians to participate in Social Security on a compulsory basis. A bill passed by the House forces dentists, lawyers, and veterinarians to join Social Security. We have basis to fear that doctors will also be included because the new Secretary of Health, Education, and Welfare, Martin Folsom has advocated the inclusion of professional groups.

We also are aware that some of the do-gooders in Washington will not give up until they have captured more tax dollars in this program. They recognize that they would collect more from doctors in Social Security taxes than they would be forced to return in payments. I feel that Social Security encourages the welfare state by placing a great portion of our people solely in the hands of the government.

During the hearings on February 8, Senator Kerr went into a full discussion as to why self-employed persons cannot be covered on a voluntary basis. He states, and other members of the committee have done likewise, that personally he favors voluntary coverage for the self employed. However, the Treasury and Health, Welfare, and Education departments, and the administration all insist that Social Security is a compulsory system and that coverage cannot be voluntary. Thus, the choice of the dentist, physicians, and lawyers, is not between voluntary and compulsory coverage but between compulsory coverage and exclusion.

Jenkins-Keough Bill

As an alternative to Social Security coverage many physicians are supporting the Jenkins-Keough Bill in Congress. Most of you, recognize, I am certain, that federal revenue laws are unfair to the self employed. The Jenkins-Keough Bill is designed to give to the self employed the same tax advantages as individuals employed by business and industry.

The Jenkins-Keough Bill would set up a voluntary pension system for all self employed. If enacted, doctors and other professional groups would be permitted to establish a tax deferred fund. You could set aside as much as ten per cent of your net income up to five thousand dollars a year. The maximum for an individual would be one hundred thousand dollars during a working lifetime. Income tax would be postponed until the funds would be received in later life as annuity payments. The fund could not be touched until the individual reaches 65 or dies, or is permanently and totally disabled.

When the individual who has established the fund reaches the age of 65 he would be permitted to take out his money in a lump sum, in annual, in quarterly, or monthly installments. Or, he may have the trustee purchase an annuity for him from an insurance company. In any event it would not be necessary for him to retire in order to benefit. The Jenkins-Keough Bill has been pending in Washington for several years but has been ignored until this past summer.

Last July the Committee on Ways and Means in the House voted favorably to include an amended version of the Jenkins-Keough Bill as part of tax revision legislation. This is the high water mark in the long struggle to obtain tax deferment equality for the self employed. But despite this favorable developement, active support of physicians and their wives will be required in order to gain enactment.

Federal Health Reinsurance

As you know the medical profession has waged a strenous battle during the past two sessions of Congress against federal health reinsurance. However, the proposed reinsurance of health plans still ranks as the keystone of the administrations health program. Therefore, it might be worth while to review briefly this controversial program. The primary purpose of the federal reinsurance is twofold. First, to encourage private companies to sell more liberal health coverage, and, secondly, to offer these policies at a lower cost than is presently possible. According to the provision of this legislation the federal government will reinsure voluntary groups and commercial companies against three-fourths of their abnormal losses. These losses might come from selling policies which pay the beneficiary more money than collected.

Federal reinsurance fails in that it will not do the following:

First of all reinsurance will do nothing to lower the cost of insurance.

Secondly, reinsurance will not make health insurance more attractive to persons who can afford premiums, but who have not chosen to do so.

Thirdly, reinsurance will not make Health Insurance available to the indigent unless the Government provides a direct subsidy.

It is felt this type of legislation will be a great boon to all of the unethical operators in the insurance industry. They can write unsound insurance policies and then turn to government to guarantee their profit. This will not help the needy people.

Simply stated the reinsurance program represents another intrusion of the federal government into a field which is being handled by private enterprise. Government insurance would introduce no magic into the field of health care costs. Even House Majority Leader Sam Rayburn, who has not been a particular friend of the medical profession, has summarized this

(Continued on Page 235)

MEETINGS

New Mexico Medical Society to Meet in Roswell May 2-4

New Mexico Medical Society will hold its 74th annual meeting May 2, 3 and 4 in Roswell, fast growing capital of the southeastern portion of the state.

In addition to the scientific and business program which is published in detail below, the Chaves County Medical Society, which will act as Convention host, has arranged convivial social activities which should assist the visiting physicians who need relaxation.

Wednesday night there will be a smoker and Thursday night a dinner dance.

Those who care to do some sight-seeing will find the charm of the West in Roswell, which is surrounded by thousands of fertile acres of growing crops and is in the midst of one of the best sheep and cattle range sections of the Southwest.

Carlsbad Caverns

Chief attraction of the Roswell area is world famous Carlsbad Caverns National Park, located 106 miles to the south. To the east is Bottomless Lakes State Park, a unique phenomenon of both scenic and sport interest, where boating, swimming, horse-back riding and picnicking are enjoyed.

To the west, 72 miles, is the famous mountain playground, Ruidoso. The Nation's highest golf course, 9,000 feet, at Cloudcroft, is only 130 miles Southwest of Roswell. Thus, convention participants will have a wonderful opportunity while visiting Roswell to visit some of the most scenic areas of the Southwest.

All physicians who are members of their respective state medical societies are cordially invited to attend.

Room accommodations are available in the Nickson Hotel or one of the many beautiful motels. A list of the motels will be provided in the near future, or write: New Mexico Medical Society, 223-24 First National Bank, Albuquerque.

The complete program follows:

WEDNESDAY May 2, 1956

8:00 a. m.
Registration Lobby Senior High School

1:30 p. m.
Session Chairman — Earl L. Malone, M. D., Pres., N M. Medical Society
Invocation — Rev. Austin H. Dillon, First Methodist Church
Welcome — E. W. Lander, M. D., Pres., Chaves County Medical Society
Inaugural Address — Stuart W. Adler, M. D. Pres.-Elect, "The Do-It-Yourself Syndrome"

2:00 - 2:30 p. m.
"Biologic Patterns in Human Cancer"
Ian Macdonald, M. D.

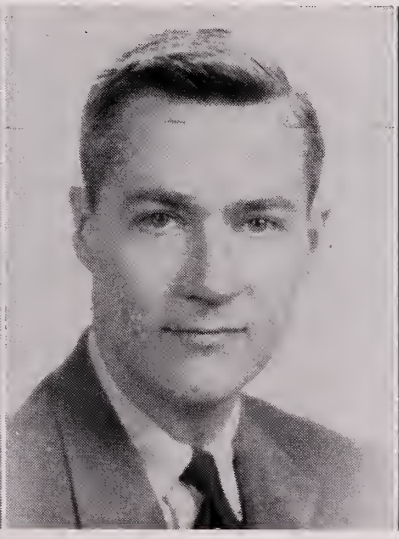
2:30 - 3:00 p. m.
"Hodgkins Disease with emphasis on Mechanism of Death"
Vernon E. Martens, Capt. MCUSN

3:00 - 3:30 p. m. VISIT EXHIBITS

3:30 - 4:00 p. m.
"Spine Fusion, Stressing Indications"
Dana M. Street, M. D.



Dr. Adams



Dr. Chapman



Dr. Collins



Dr. Fogelman



Dr. Macdonald



Capt. Martens

4:00 - 4:30 p. m.
"Radiological Considerations of Gastro-intestinal Bleeding"
Robert D. Moreton, M. D.

4:30 p. m. VISIT EXHIBITS

7:00 p. m.
Stag Smoker — Buffet — for physicians and exhibitors — Roswell Country Club

Program for wives of attending physicians is in charge of the Chaves County Medical Auxiliary and will be announced later.

THURSDAY May 3, 1956

Session Chairman — Samuel R. Ziegler, M. D.
Espanola

9:00 - 9:30 a. m.
"Hysterectomy"
Conrad G. Collins, M. D.

9:30 - 10:00 a.m.
"Peripheral Vascular Disease"
Morris J. Fogelman, M. D.

10:00 - 10:15 a. m. VISIT EXHIBITS

10:15 - 10:45 a. m.
"The Treatment of Myocardial Infarction"
Carleton B. Chapman, M. D.

10:45 - 11:15 a. m.
"Out Patient Management of Hypertension"
John H. Moyer, M. D.

11:15 - 11:45 a. m.
"Rheumatic Fever as a Diagnostic Problem in the Subtropical Climate"
Forrest H. Adams, M. D.

12:15 - 1:30 p. m.
Round Table Luncheons
Medicine — St. Mary's Hospital Staff Room
Drs. Chapman, Moyer, Adams, Collins and Moreton
Co-Chairmen — Dan H. Cahoon, M. D.
E. J. Hubbard, M. D.
Surgery — Eastern New Mexico Medical Center Staff Room
Drs. Macdonald, Fogelman, Street and Martens
Co-Chairmen — Quentin J. Florence, M. D.
John S. Moore, M. D.

1:30 p. m. VISIT EXHIBITS

Session Chairman — James C. Sedgwick, M. D.
Las Cruces

2:00 - 2:30 p. m.
"Amateur Clinical Psychology for the Cancer Patient"
Ian Macdonald, M. D.

2:30 - 3:00 p. m.
"The Treatment of Post-traumatic Paraplegia"
Dana M. Street, M. D.

3:00 - 3:15 p. m. VISIT EXHIBITS

3:15 - 4:30 p. m.
Panel Discussion — Guest Speakers
Subject: "Acute Anuria"
Moderator: Conrad G. Collins, M. D.

4:30 - 4:45 p. m.
Sears-Roebuck Foundation Fund
Robert D. Moreton, M. D.
Mrs. James C. Worthy, Asst. to Chairman of Board; Sears, Roebuck & Co.

7:00 p. m.
Cocktails

7:30 p. m.
Dinner Dance
Officers' Club, Walker Air Force Base
Formal Dress Optional

FRIDAY May 4, 1956

Session Chairman — Allen L. Haynes, M. D.
Clovis

9:00 - 9:30 a. m.
"Fluid and Electrolyte Balance in Surgery"
Morris J. Fogelman, M. D.

9:30 - 10:00 a. m.
"Pharmacodynamics and Therapeutic Uses of Diuretics"
John H. Moyer, M. D.

10:00 - 10:15 a. m. VISIT EXHIBITS

10:15 - 10:45 a. m.
"Clinical Aspects of Cardio-pulmonary Disease"
Carleton B. Chapman, M. D.

10:45 - 11:15 a. m.
"Xray Diagnosis of Non-tuberculous Pulmonary Disease"
Robert D. Moreton, M. D.

11:15 - 11:45 a. m.
"Fatal Coronary Arterio-sclerosis in Young Adults"
Vernon E. Martens, Capt. MCUSN

12:15 - 1:30 p. m.
Round Table Luncheons
Medicine — Eastern N. M. Medical Center Staff Room
Drs. Chapman, Moyer, Adams and Martens
Co-Chairmen — Pierre Salmon, M. D.
Earl L. Malone, M. D.
Surgery — St. Mary's Hospital Staff Room
Drs. Macdonald, Fogelman, Street, Collins and Moreton
Co-Chairmen — Richard P. Waggoner, M. D.
I. J. Marshall, M. D.
Session Chairman — Stuart W. Adler, M. D.
Albuquerque

1:30 p. m. VISIT EXHIBITS

2:00 - 2:30 p. m.
"Heart Disease in Infants and Small Children"
Forrest H. Adams, M. D.

2:30 - 3:00 p. m.
"Post-partum Complications"
Conrad G. Collins, M. D.

3:00 - 3:15 p. m. VISIT EXHIBITS

3:15 - 4:30 p. m.
Panel Discussion — Guest Speakers
Subject: "Steriods"
Moderator: John H. Moyer, M. D.

4:30 p. m. VISIT EXHIBITS

6:30 p. m. ORGANIZATION Dinners — Details to be announced later.
N. M. Pediatric Society
N. M. Laboratory & Radiological Society

SATURDAY May 5, 1956

Annual Meeting of New Mexico Heart Association
"The Limitations to Human Longevity"
Charleton B. Chapman, M. D.

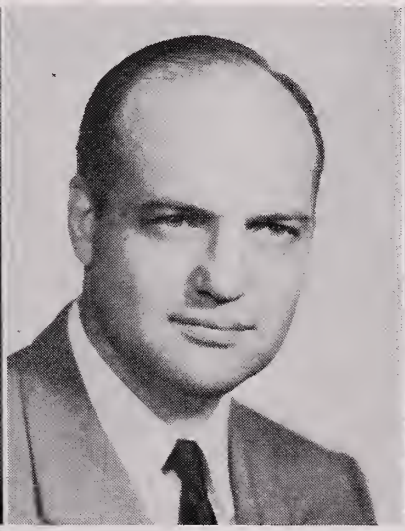
ROSTER OF GUEST SPEAKERS

Carleton B. Chapman, M. D.
Professor of Medicine
Southwestern Medical School
Dallas, Texas

John H. Moyer, M. D.
Associate Professor of Pharmacology and Medicine
Baylor University College of Medicine
Houston, Texas



Dr. Moreton



Dr. Moyer



Dr. Street

Ian Macdonald, M. D.
Associate Professor of Surgery
University of Southern California School of Medicine
Los Angeles, California

Morris J. Fogelman, M. D.
Associate Professor of Surgery
Southwestern Medical School
Dallas, Texas

Conrad G. Collins, M. D.
Professor and Chairman of the Department of Obstetrics and Gynecology
Tulane University School of Medicine
New Orleans, Louisiana

Forrest H. Adams, M. D.
Associate Professor of Pediatrics
University of California at Los Angeles School of Medicine
Los Angeles, California

Dana M. Street, M. D.
Chief of Orthopedics
Veterans Administration Hospital
Memphis, Tennessee

Robert D. Moreton, M. D.
Lecturer in Radiology
Texas University Medical School—Galveston Branch
Fort Worth, Texas

Vernon E. Martens, Capt. M.C., U.S.N.
Associate Professor of Pathology
Georgetown University School of Medicine
Director of Laboratories and Chief Pathologist
National Naval Medical Center
Bethesda, Maryland.

TECHNICAL EXHIBITORS

Abbott Laboratories, North Chicago, Illinois
Alcon Laboratories, Inc., Fort Worth
Allied Medical Supply, Albuquerque
A. S. Aloe, Company, St. Louis
Arlington-Funk Laboratory Division
U. S. Vitamin Corp., New York
Audio-Digest Foundation, Glendale, California
Ayerst, McKenna & Harrison, Los Angeles
Ciba Pharmaceutical Products, Inc., Summit, N. J.
The Coca Cola Company, Atlanta
Desitin Products, Providence, R. I.
Eaton Laboratories, Norwick, N. Y.
Esco Bio-Chemicals, Albuquerque
General Electric Co., Dallas
Lederle Laboratory Division
American Cyanamid Co., Pearl River, N. Y.
Eli Lilly & Co., Indianapolis
Mead Johnson & Co., Evansville, Indiana
M. & R. Laboratories, Columbus, Ohio
New Mexico Pharmacal Co., Albuquerque
New Mexico Physicians Service, Albuquerque
Parke Davis & Co., Kansas City
Pfizer Laboratories, Brooklyn, N. Y.
A. H. Robins Co., Inc., Richmond, Virginia
J. B. Roerig & Co., Chicago
Sandoz Pharmaceutical Co., Hanover, N. J.
G. D. Searle & Co., Chicago
Sharp & Dohme, Division of Merck & Co., Inc., Philadelphia
Southwestern Surgical Supply Co., El Paso
E. R. Squibb & Sons, New York
Upjohn Company, Denver

Southwestern New Mexico Medical Society to Meet in Deming

The regular meeting of the Southwestern New Mexico Medical Society will be held in Deming, N. M., April 4 with a dinner starting at 6:30 p. m.

Guest speaker will be Dr. E. S. Crossett, El Paso thoracic surgeon, who is a Diplomate of the American Board of Surgery. Also on the program is Mrs. Aaron E. Margulis of Santa Fe, president of the New Mexico Medical Society Auxiliary.

The meeting will be held in the Deming Country Club. Physicians and their wives are invited.

Dr. Remo Gay of Las Cruces is in charge of the program. Dr. W. J. Hossley, Jr., of Deming is president.

Southwestern Surgical Congress to Meet April 16-18 in Tucson

Annual meeting of the Southwestern Surgical Congress will be held April 16-18 in the Pioneer Hotel in Tucson. An attendance of some 400 physicians is anticipated.

Officers of the Southwestern Surgical Congress are Charles R. Rountree, M. D., Oklahoma City, president; Fred H. Crock, M. D., Fort Smith, Arkansas, vice-president; and John V. Goode, M. D., Dallas, president-elect.

Guest speakers at the Congress will be Joseph H. Boyes, M. D., Los Angeles; John Adriani, M. D., New Orleans; and Robert A. Wise, M. D., Portland, Oregon.

There will be a short tour of northern Mexico at the conclusion of the program.

U. S. - Mexico Border Public Health Group to Meet in Mexicali and Calexico

The fourteenth annual meeting of the United States-Mexico Border Public Health Association will be held jointly in Mexicali and Calexico April 13-16.

Registration will begin on April 13. Governing Council meetings will be held beginning April 13, in the morning and business sessions of the Sections are to be held that afternoon. General sessions will be held the morning of April 14, and the afternoon of April 16. Section meetings will take place the afternoon of April 14, and the morning of April 16. Sunday April 15, has been set aside for visits and tours, and meetings of special committees. Ample entertainment for the ladies is being arranged by the local planning committee.

ANNUAL MEETING

DISTRICT ONE, TEXAS MEDICAL ASSOCIATION



Dr. E. W. Schmidt of Pecos (center) was elected president of District One of the Texas Medical Association. On the left is Dr. Delphin von Briesen of El Paso, retiring president, and on the right, Dr. Charles E. Oswalt, Fort Stockton, Texas, Councillor for District One, who reported on current legislation before Congress.



Above, Dr. James A. Evans (right) of the Lahey Clinic, principal speaker, and Dr. Ross W. Rissler, El Paso, also a speaker.
Below, Dr. Jim Camp of Pecos (right), who in 1950 was elected General Practitioner of the Year by the Texas Medical Association. and Dr. James J. Gorman of El Paso.



Dr. E. W. Schmidt of Pecos, Texas, was elected president of District One of the Texas Medical Association at its annual meeting in Pecos February 15, 1956.

Other officers elected are Dr. H. D. Garrett, El Paso, vice-president; and Dr. John P. Dunn, Pecos, secretary-treasurer. Dr. Delphin von Briesen of El Paso is the retiring president. Pecos was selected as the site for the 1957 meeting.

The principal scientific presentation was made by Dr. James A. Evans in the Cardiovascular Division of the Department of Internal Medicine at the Lahey Clinic in Boston. He spoke on "Modern Approach to the Treatment of High Blood Pressure". Other speakers and their subjects were: Dr. Ross W. Rissler, El Paso, "Some Basic Concepts Regarding Recent Steroid Hormone Studies"; Dr. Branch Craige, El Paso, "Headache"; Dr. David M. Cameron, El Paso, "Whiplash Injuries of the Neck"; Dr. Frederick P. Bornstein, El Paso, "Acute Cardiac Deaths from Conditions other than Coronary Occlusion"; Dr. Robert N. Caylor, El Paso, "Ocular Problems of Children"; and Dr. E. S. Crossett, El Paso, "Injuries of the Chest".

At the business meeting members voted unanimously to make SOUTHWESTERN MEDICINE the official publication of the District One organization.

Born and reared in Malone, Texas, Dr. Schmidt received his B. A. from Baylor University and his M. D. from the University of Tennessee. He interned at Toledo Hospital in Toledo, Ohio, and served for three years with the U. S. Air Force as Flight Surgeon, with one year on Okinawa as Kadena AFB Surgeon. He resigned from the Regular Army in 1948 and began private practice in Pecos in March, 1949.

Dr. Schmidt is past president of the Permian Basin Chapter of the Texas Academy of General Practice, a charter member of the Flying Physicians Association, and district coordinator of aviation for the Civil Defense Commission.



SESSIONS . . .

Left, relaxing between sessions are (left to right) Dr. W. H. McClure, Kermit, Dr. A. J. Barnett, Monahans, and Dr. Wayne Jones, Monahans. Below left are Dr. V. A. Sherrod, Iraan, (left) and Dr. D. J. Sibley, Jr., Fort Stockton. Dr. Sibley, district chairman for the American Medical Education Fund, raised $478 at the meeting. Below right are Dr. Grady Morrow. El Paso, (left), retiring secretary-treasurer, and Dr. R. S. Clayton, El Paso.





Below left are Dr. Bruce Hay, Pecos, (left to right) Dr. C. A. Robinson, Kermit, and his wife, also a physician, Dr. L. Rose Robinson. The Robinsons were in the same class at medical school. Below right are Dr. Harold Lindley, Pecos, (left) and Dr. Ben H. Cooley, El Paso.







AUXILIARY OFFICIALS—Left to right are Mrs. D. J. Sibley, Jr., Fort Stockton, president of Big Bend Counties Medical Auxiliary; Mrs. W. W. Schuessler, El Paso, president of the El Paso County Medical Society Auxiliary; Mrs. Joseph H. McCracken, Jr., Dallas, president of the Texas Medical Association Auxiliary, who reported on statewide activities; Mrs. Joseph Gibson, Kermit, president of the District One Auxiliary; Mrs. Bruce Hay, Pecos, in charge of arrangements for the meeting; Mrs. Harold Lindley, Pecos, first vice-president of the state auxiliary; and Mrs. George A. Hoffman, Fort Stockton, councilwoman for District One and retiring president.



WOMEN'S AUXILIARY

On the left are (left to right) Mrs. W. A. Jones, El Paso, Mrs. James J. Gorman, El Paso, who presented a book review on "Doctor to the Island", and Mrs. E. W. Schmidt, Pecos, wife of the president. Below left are Mrs. V. A. Sherrod, Iraan, (left) and Mrs. Delphin von Briesen, El Paso. Below right are Mrs. C. M. Stanfill, El Paso, (left) and Mrs. Winslow P. Stratemeyer, El Paso.









AFTER SESSIONS . . .

Above left are Dr. and Mrs. Fred J. Prout, Monahans. Above right are Dr. S. Perry Rogers, El Paso, (left) and Dr. C. M. Stanfill, El Paso.





Above left are Dr. and Mrs. Nathan Kleban, El Paso, (left to right), Dr. Paul Kunstadt, Monahans, and Dr. W. O. Rehmeyer, Monahans. Above right are Dr. Morton H. Leonard, secretary-treasurer of the El Paso County Medical Society, (left) and Dr. Jack D. Reedy, Pecos. Below left are Dr. David M. Cameron, El Paso, (left to right), Dr. Frederick P. Bornstein, El Paso, and Dr. George A. Hoffman, Fort Stockton. Below right are Dr. E. S. Crossett, El Paso, (left) and Dr. Schmidt.





CURRENT THERAPY

Diuretic Drugs

By Jack A. Bernard, M. D., El Paso

Rational diuretic therapy depends upon a knowledge of the various diuretics available and their usage, particularly in combination. They may be grouped as follows:

The organic mercurial diuretics.
The acidifying diuretics.
The xanthine diuretics.
The aminouracils and related compounds.
The sulfonamides.

The mercurial diuretics include Mercuhydrin, Salyrgan-Theophylline, Thiomerin, Neohydrin, and others. Mercuhydrin and Salyrgan-Theophylline may be given intravenously or intramuscularly. Thiomerin is given subcutaneously. Neohydrin is given orally. Thiomerin contains Mercaptan in place of Theophylline, making it much less toxic. Oral diuretics are poorly tolerated and the results uncertain. The intravenous diuretics may precipitate serious toxic reactions and should be discouraged. The intramuscular or subcutaneous route is recommended.

Toxic Effects

The toxic effects of mercurial therapy include overdosage or cumulation, bone marrow depression with severe agranulocytosis, and the anaphylactic type reactions. These latter severe reactions usually occur after repeated or prolonged course of a mercurial rather than the first dose, and are usually preceded by minor reactions. Therefore minor reactions should not be ignored or treated lightly, and the mercurial compound should be changed.

Avoid mercurialism by not giving injections more often than 48 hours. There is no need to give a mercurial while diuresis continues from the preceding dose, which effect usually lasts about 48 hours. It is better to avoid excessive diuresis. By excessive is meant greater than ten pounds weight less in 24 hours in a large person and greater than 5 pounds in a small person. Ideal diuresis is a loss of 2 to 4 pounds the first day, then 1 - 2 pounds daily. This gives the chemical changes a chance to correct themselves. Doses larger than 2 cc. are unlikely to improve results and actually 1 cc. twice weekly is more effective than 2 cc. once a week. All such mercurial therapy must be individualized.

Ammonium Chloride

Ammonium chloride is an acidifying diuretic of low potency. It is useful as a gentle, non-toxic diuretic that can be repeated over long periods of time; for example, in premenstrual edema. It has long been used to potentiate the effect of the mercurial diuretic. It aids in replenishing plasma chloride and prevents undue chloride depletion. It is contraindicated in acidosis.

The Xanthine diuretics include Caffeine, Theophylline, and Theobromine. Theophylline is commonly used in combination with the mercurials to enhance their action. Occasionally the oral use of the Xanthines may be helpful.

Mictine is closely related to the aminouracils. It requires an interrupted dosage schedule. Its usage is limited by its toxic side efects.

Diamox

Diamox is a sulfonamide which is no longer antibacterial. It blocks the formation of carbonic acid in the kidney tubules, with the urinary excretion of a fixed base, producing a relative acidosis. Side effects are uncommon. They include vomiting, diarrhea and paresthesias. Refractoriness may develop. Diamox is said to antagonize mercurial action and it has been recommended that it be stopped 24 hours before giving the mercurial but its dosage potentiates the action of the mercurial diuretic agent. Ammonium chloride is also said to counteract Diamox diuresis.

To enhance their diuretic action the diuretics are often given in combination. Aminophylline 7½ gr. may be given before, with, or after a diuretic to enhance its action and may double the diuretic effect. Decholin 20%—5 to 10 cc. IV may be used similarly. Hypertonic glucose also may be used. Diamox orally may be used for maintenance and to potentiate mercurial diuresis. Ammonium chloride 3 to 4 gr. daily will also potentiate the mercurial action.

Excessive Diuresis

Excessive diuresis may result in hypochloremic alkalosis or hyponatremic acidosis. Hypochloremic alkalosis may be avoided by allowing 2 - 3 days between individual mercurial injections, or Ammonium chloride 3 to 6 grm daily may be used to prevent the loss of chloride. Hyponatremic acidosis (low salt syndrome) is more apt to develop when a disproportionate loss of chloride is obviated by concomitant ammonium chloride medication. Rapid azotemia often irreversible may result. Other effects of excessive diuresis include hypokalemia, tetany, vitamin depletion, thrombo-embolic manifestations, spontaneous redigitalization, and acute urinary retention.

Summary

In summary, diuretic therapy must be individualized. Thiomerin subcutaneously or one of the other mercurials intramuscularly should be given 1 - 2 cc. 1 - 2 times weekly, thereby giving the electrolytes a chance to readjust themselves. Ammonium chloride

(Continued on Page 246)

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

By Andrew M. Babey, M. D., Las Cruces, N. M.

(Continued)

26. "From the practical point of view it is clear that four different clinical patterns may be produced in polio: (1) there may be a minor illness only which is followed by complete recovery; (2) the minor illness may be succeeded by a major illness during which actual paralysis does not ensue; (3) the minor illness is succeeded by a major illness with paralysis; (4) there may be no observable minor illness and the apparent onset dates from the beginning of paralysis. T. Anderson; *British Medical Journal.* August 20, 1955; P. 485

27. "The association between intramuscular injections and the appearance of paralysis in the limb used for the injection must be regarded as proved. It is therefore very unwise to administer penicillin, and this is a strong argument in favour of the practitioner trying to avoid intramuscular injections during the polio season, except when there are clear-cut indications of a bacterial infection which will respond to their administration. T. Anderson; *loc. cit.;* P. 485

28. "Nuchal rigidity and spinal stiffness are usually present, but if tested for by the conventional lifting of the head up from the pillow their presence will often be missed. When the patient's confidence has been gained he should be asked to sit up and to try to 'kiss his knees' or to touch his knees with his chin. Characteristically the patient cannot bend forward at all; the whole spine is held stiffly, the head tends to fall backward, and the body has to be supported by the arms spread out behind—the well-known "tripod" sign." T. Anderson; *loc cit.;* P. 485

29. "Although it should not need to be said, the use of painful stimuli such as pinpricks to see if the limb will be moved is entirely out of place and must be seriously condemned. The examination of the restless and querulous child with possible poliomyelitis should present a challenge to the physician to elicit his information with the least upset." T. Anderson; *loc. cit.;* P. 486

30. "It is in a general way true to say that if paralysis is going to occur it will have appeared within five days of onset of the major illness and that extension of the paralysis is unlikely to occur after ten days from the onset." T. Anderson; *loc. cit.;* P. 486

Bladder Disturbance

31. "Disturbance of bladder function is strongly in favour of a diagnosis of poliomyelitis, and, although retention is most common, incontinence (not necessarily due to overflow) is also sometimes observed." T. Anderson; *loc. cit.;* P. 486

32. "A point of clinical value is that in poliomyelitis no sensory disturbance is observed. This may therefore constitute an important negative sign." T. Anderson; *loc. cit.;* P. 486

33. "Death in poliomyelitis always arises from disturbance of ventilatory function. This may result from paralysis of the respiratory muscles, from abolition of the swallowing and cough reflex, or perhaps from actual viral involvement of the respiratory centre. It is always a danger when an attempt is made to rationalize a subject for the purposes of teaching that one thereby tends to oversimplify. It should therefore be emphasized at once that the correct diagnosis and proper assessment of ventilatory defect is always a matter of extreme difficulty and that it is impossible to lay down clear-cut pictures of "typical" cases." T. Anderson; *loc. cit.;* P. 487

34. "Patients with swallowing defect may present no other evidence of paralysis, and such cases can develop signs of distress with great rapidity." T. Anderson; *loc. cit.;* P. 487

35. "When paralysis of swallowing is accompanied by a paralysis of the respiratory muscles the outlook is particularly grave." T. Anderson; *loc cit.;* P. 487

36. "Although double infections of polio in the same family are not common, they occur with sufficient frequency to make it dangerous to assert that they never occur." T. Anderson; *loc. cit.* P. 487.

Rheumatic Patients

37. "It is now well established that patients who have had an attack of rheumatic fever are especially susceptible to recurrent attacks. From 20 to 80 per cent of rheumatic patients experiencing a streptococcal infection will develop a new attack of rheumatic fever. It is for this reason that continuous prophylaxis is recommended for all individuals who have experienced an overt rheumatic episode." Charles H. Rammelkamp, Jr.; *Annals of Internal Medicine,* September, 1955; p. 516

38. "The situation is somewhat different in the case of nephritis. Patients who have chronic nephritis frequently develop an acute exacerbation of the disease following a variety of infections . . . In such patients the acute exacerbation may precipitate an episode of renal failure. It is therefore advisable to place all patients with signs of chronic nephritis on

a prophylactic regimen. For this purpose oral penicillin may be administered in doses of 250,000 units once or twice daily." Rammelkamp; *loc. cit.;* p. 516

39. "Patients who have developed acute glomerulonephritis following a streptococcal infection usually recover completely and fail to show an increased susceptibility to recurrent attacks. It seems possible that they may even be less susceptible to an attack of nephritis than the normal population . . . Since type 12 streptococci appear to be primarily responsible for most cases of nephritis in the country, the nephritic patient is already protected from infection with this organism. Since infection with most other serologic types will not precipitate a new attack in these patients, this group of patients does not require protection from streptococcal and other bacterial infections." Rammelkamp; *loc. cit.;* p. 516

40. "There is no infallible way of distinguishing between the faucial exudate of diphtheria and that of streptococcal tonsillitis, and most of the so-called rules are misleading. It is not true, for example, that if an attempt to remove the exudate causes bleeding the case must be diphtheria, although bleeding does occur more often in diphtheria, nor is it true that if the exudate is mushy and comes off easily the case cannot be diphtheria. A. B. Christie; *British Medical Journal;* September 10, 1955; p. 669

Dead White Exudate

41. "An exudate of any size which remains dead white in colour is unlikely to be diphtheritic." Christie; *loc. cit.;* p. 669

42. "The streptococcal throat tends to be an acutely inflamed throat, the diphtheritic throat looks normal except for the exudate. When exudate extends beyond the tonsils, diphtheria should always be suspected." Christie;; *loc. cit.;* p. 669

43. "Pain is a feature of streptococcal tonsillitis but not of diphtheria: a throat which is painful but fairly clean is unlikely to be diphtheritic." Christie; *loc. cit.;* p. 669

44. "In this first and obvious type of reassurance include reassurance that the patient is getting on as quickly as is possible and as well as other people with similar illnesses." A. Barham Carter; *British Medical Journal;* Sept. 10, 1955; p. 571

45. "The second need of the patient is less obvious, perhaps. I find that many need to be reassured that they are really ill . . . I always do my best to reassure patients of the genuineness and reality of their complaints, and especially so in the psychoneurotic type of illness." Carter; *loc. cit.;* p. 671

Reassurance

46. "Now for an important but neglected reassurance—about his doctor. The patient needs no reassurance that his doctor is clever—this astonishing belief is held by all laymen, and occasionally the adjective is used in a deprecatory way. However, he needs reassuring that the doctor is interested, that the doctor understands his case, and that the doctor has seen many like it before." Carter; *loc. cit.;* p. 671

47. "Reassurance without examination is criminal, and has a place only in the hands of quacks and charlatans. I need say no more than that." Carter; *loc. cit.;* p. 671

48. "Reassurance that is hesitating, uncertain, and artificial is of little use; and it is important to realize that, although sincerity is one of the emotions that can be detected and appreciated very easily, insincerity is even more apparent." Carter; *loc. cit.;* p. 671

49. "The right type of patient must be chosen for this form of therapy. Reassuring depressive or paranoid patients is not only a waste of time but makes them worse; they believe so much in the reality of their tortures that, unfortunately, any such attempt at lightening their load fails. In the same way, telling patients who visit you that nothing is wrong with them is of no help unless you are sure they are malingering or they have come for a routine examination without symptoms. What you can do is to add one very important word. If you think they are not very ill you can and must say, "There is nothing seriously wrong with you," which will be accepted by most patients and which will do them good." Carter; *loc cit.;* p. 672

(To be continued)

The Default . . . . . .

(Continued from Page 224)

legislation by calling it "a blundering and stupid way to attempt to solve the health needs of the nations."

Medical Care of Military Dependents

Another serious encroachment upon private practice is the legislation which would provide medical care for the dependents of those in the armed service. Medical care would be provided in military hospitals, when local physicians, hospitals, and civilian resources could be utilized. The American Medical Association has taken the opposite stand in its testimony before Congress on this bill. It has recommended that military dependents, like other civilians, should be treated by private physicians and hospitals unless these resources are inadequate. Then, and only then, should physicians in uniform be employed.

You will agree that many difficult problems confront the medical profession in 1956. I believe that it is imperative for all of us to keep abreast with developments in Washington.

We must continue to work diligently through our county, district, and state medical societies. I am proud to be working for Texas District One Medical Association and I pledge to you that I will continue to carry out your desires and objectives.

ORIGINAL ARTICLES

A New Approach to the Treatment of Severe Constipation*

By Robert J. Antos, M. D., Phoenix

There is probably no condition which is so troublesome to patients and physicians as constipation. Of the drugs available for use in constipation few are without undesirable effects. Thus the development of a new therapeutic approach to bowel problems is noteworthy.

Wilson and Dickinson[1] have recently reported on the use of the wetting agent, dioctyl sodium sulfosuccinate, in the management of constipation. This compound exerts its therapeutic effect by permitting water to penetrate and effectively soften hard fecal masses. Over the past eight months we have studied the effect of this material on various types and degrees of faulty bowel evacuation Our experience with 78 patients serves as the basis of this report.

Results were uniformly good This was particularly gratifying because of the mediocre results obtained with previous forms of medication.

Eight Infants

Eight infants, ranging in age from 2 to 10 months, were selected because of persistent, hard stools despite many changes in formula. The mothers of these infants were instructed to add from one to ten drops of a one per cent solution of dioctyl sodium sulfosuccinate** to each bottle of formula. Without exception the infants developed soft stools within two or three days, after which the dosage was gradually reduced. The maintenance dose after approximately a week varied from one to three drops per bottle of formula.

Three children with megacolon were studied. One child, age 4, had a bowel movement on the average of every 12 to 15 days. Prior to this study when no movement ensued after about 10 days, the mother would start giving laxatives and enemas. The other two children, age two and three and a half years, had similar difficulty. Both had developed water absorption "shock" following enemas. Each child produced a soft stool following a dioctyl sodium sulfosuccinate enema, and none developed any "shock" from absortion of too much water through the overdilated colon. These three cases alone were remarkable enough to convince us of the effectiveness of dioctyl sodium sulfosuccinate.

Seven Patients

Seven patients ranging in age from 59 to 86 years of age were treated for severe fecal impaction. Three of these patients had had impactions before requiring digital removal and multiple oil or hydrogen peroxide enemata. None of these patients had had a bowel movement for six to ten days. Treatment was as suggested by Wilson and Dickinson.[1] Two to five ml. of the 1 per cent solution was added to two or three ounces of water or mineral oil and given as a retention enema. All were relieved with evacuation of soft stools within ¼ to one hour after receiving the dioctyl sodium sulfosuccinate solution in water or oil. The stool-softening effect of Colace in these severely impacted patients was dramatic.

Thirty-seven pregnant women, with histories of troublesome constipation in previous pregnancies, were studied. All had hard "nugget" type bowel movements. These patients had tried a multitude of laxatives, only to have them prove to be unsatisfactory because of (1) griping, (2) failure to produce adequate movements, (3) production of too violent a purgation, (4) irritation of hemorrhoids or (5) gradual decrease in effectiveness. These patients were given dioctyl sodium sulfosuccinate in capsule form+.

The dose varied from 30 mg. once daily to 60 mg. three times daily. In 29 of these women dioctyl sodium sulfosuccinate alone produced excellent softening of feces which enabled each patient to have normal daily evacuations.

Eight Patients

The remaining eight patients had been troubled with chronic constipation prior to their pregnancy. In these eight patients dioctyl sodium sulfosuccinate produced adequate stool softening, but not full or easy evacuation. It became apparent that a peristaltic stimulator was needed. Several were tried; the one most preferred by the patients, and the one that gave consistent results, was 1,8-dihydroxyanthraquinone, a compound related to cascara. Fifty mg. of this drug and 60 mg. of dioctyl sodium sulfosuccinate were administered once daily, usually in the evening. After periods varying from a few weeks to 3 or 4 months a majority of these patients developed enough conditioning to promote peristalsis without 1,8-dihydroxyanthraquinone. Thereafter dioctyl sodium sulfosuccinate alone was sufficient.

Following the above clinical experience it was decided to study a group of twenty-three otherwise "normal" adults troubled with chronic constipation of over one year's duration. These patients had similar histories of hard, lumpy evacuations at irregular intervals of three to five days. They resorted to fre-

*From the Department of Medical Research, Good Samaritan Hospital, Phoenix, Arizona.
**Colace supplied by Mead Johnson & Company.
+ Colace capsules.

quent enemas, and they had changed their laxatives on the average of every three to four weeks. The patients were given capsules of dioctyl sodium sulfosuccinate and instructed to establish their own effective dose. As expected, only a few of these patients reported favorable results other than that the stools were softer. Evacuation was still sluggish. It was then explained to each patient that dioctyl sodium sulfosuccinate was not a laxative, but was instead a fecal softener.

Soft Stool

Patients were then told to continue using just enough dioctyl sodium sulfosuccinate to maintain a soft stool and in addition to take small amounts of any laxative they desired. They were given 1,8-dihydroxyanthraquinone to try. They all preferred the combination of this latter preparation and dioctyl sodium sulfosuccinate. In most, a single evening dose of 60 mg. of dioctyl sodium sulfosuccinate and 50 mg. of 1,8-dihydroxyanthraquinone was adequate after establishing daily soft evacuations.

As Wilson and Dickinson[1] have pointed out, it is practically impossible to do a controlled study on a problem such as this. Our patients were selected because of their difficulty; the effectiveness of the medications studied can only be evaluated by comparison to the poor results these subjects obtained from the various remedies they used in the past.

Conclusions: In all patients, the administration of dioctyl sodium sulfosuccinate proved to be an effective fecal softener. No adverse side effects were noted. In persons without a history of chronic constipation, this preparation alone is very often an effective remedy. In those persons with poor peristalsis, Colace softens the stool, but a peristaltic stimulator is needed, although usually in very small amounts. The peristaltic stimulator the patients found most desirable was 1,8-dihydroxyanthraquinone. The two preparations made an effective combination when administered together.

Impaction

In children with megacolon, dioctyl sodium sulfosuccinate may be effectively administered by mouth and, in case of impaction, can safely be administered as a retention enema. In elderly patients with impaction, a retention enema of dioctyl sodium sulfosuccinate is the treatment of choice. This, we believe, is due to the fact that very effective softening of the feces is achieved with a very small amount of fluid.

In most adult patients, a reduced dosage of 30 to 60 mg. once or twice daily is adequate after the initial softening effect is achieved. In infants, small doses of the one per cent aqueous solution once to three times daily is very gratifying to the distraught mother and physician. Instead of juggling the formula and trying a multitude of colic remedies, laxatives, suppositories, malts, high syrup or sugar additions, the simple procedure of adding a few drops of dioctyl sodium sulfosuccinate solution to the formula literally works a miracle.

SUMMARY

1. A new approach to the problem of hard stools in constipation has been outlined.
2. Dioctyl sodium sulfosuccinate keeps stools soft without undesirable side effects.
3. Dioctyl sodium sulfosuccinate alone gives excellent results in many patients.
4. When peristalsis is persistently poor, laxatives may be used along with dioctyl sodium sulfosuccinate. In these cases dioctyl sodium sulfosuccinate decreases the amount of laxatives needed.

BIBLIOGRAPHY

1. Wilson, J. L., and Dickinson, D. G.: Use of Dioctyl Sodium Sulfosuccinate (Aerosol O.T.) for Severe Constipation, J.A.M.A. 158: 261-263 (May 28) 1955.

Postgraduate Course on Diabetes at University of Colorado in May

A two-and-one-half day postgraduate course on "The Management Of Diabetes" will be offered at the University of Colorado School of Medicine on May 17, 18, and 19, 1956. The course will be co-sponsored by the Department of Medicine and the Office of Postgraduate Medical Education of the University of Colorado School of Medicine and the Colorado Diabetes Association.

Designed for practicing physicians, the course will offer a review of basic knowledge of the disease and will orient the physician to the newer developments in the field, stressing the practical applications. The first morning will be devoted to a review of basic physiology, endocrinology, pathology, and diagnosis. Clinical aspects of the disease and its complications will then be presented with emphasis on management.

The final session on Saturday morning will be devoted to a live clinic presenting a variety of current clinical problems for discussion by the guest clinicians. Ample opportunity will be offered for questions and discussion by registrants in the course.

Three guest clinicians will assist the medical school faculty in the presentation of this course.

A detailed program and further information may be obtained by writing to the Office of Postgraduate Medical Education, University of Colorado Medical Center, 4200 East Ninth Avenue, Denver 20, Colorado.

Apology

SOUTHWESTERN MEDICINE deeply regrets omission of a credit line which should have been carried with the editorial "The Physician and Tobacco," published in its December, 1955 edition. This line was omitted through a printer's error and read "Authority for much of the information carried in this editorial comes from an article entitled "Effects of Tobacco as Related to Otolaryngology," by Fletcher D. Woodward, M. D., of Charlottesville, Virginia, and published in the April, 1955 edition of the Texas State Journal of Medicine.

Six Year Report on the Use of the Cerebral Palsy Chair-Brace

By Herbert E. Hipps, M. D., Waco, Texas

The Cerebral Palsy chair-brace has proven to be of considerable value as an aid in the training program of the severely involved Cerebral Palsy patient. By "severely involved" I mean the child who cannot balance or control movements of his head, who cannot sit alone, who has no use of his hands, and who, of course, cannot talk, stand or walk.

This chair-brace, is a specially designed, padded chair with wide legs on rollers, fitted with an adjustable crotch post to prevent the child from sliding down out of the chair, an adjustable hinged back, hinged in several places, to lessen little by little the amount of back support the child needs, adjustable retention straps, a movable, comfortable, head supporting device, a toy arm, and a toy tray. This chair-brace is especially valuable in teaching the child head balance, sitting balance, and the early use of his arms and hands.

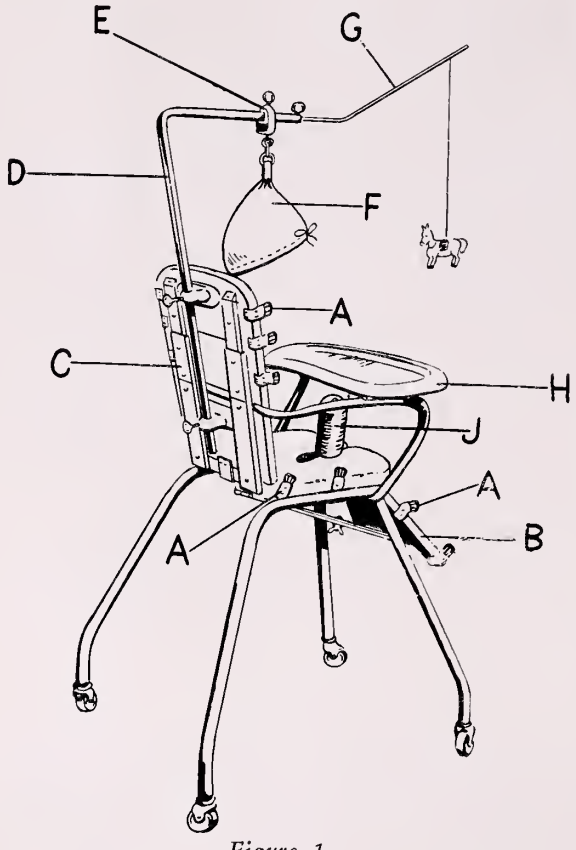


Figure 1

A. Buckles for retention straps about shoulders, back, lap, and legs.
B. Adjustable leg rest.
C. Adjustable back, can be raised or lowered or taken away in sections easily and quickly.
D. Removable upright arm for headpiece.
E. Adjustable swivel socket for attachment of headpiece.
F. Stockinette type of headpiece.
G. Adjustable flexible toy arm.
H. Toy tray, removable.
J. Adjustable crotch post.

Developed Experimentally

The Cerebral Palsy chair-brace was developed experimentally in 1948 and 1949, and the first publication pertaining to its use was in "The Physical Therapy Review" in 1949.[1] Again in January 1950 an article was published on its use in The Journal of Bone and Joint Surgery.[2]

The chair-brace in use today has had very few changes made in it during the last five years, except for the headpiece, and now we routinely use the stockinette attachment glued to the child's head with a non-irritating liquid adhesive, since this has been found to be, by far, the most effective and the most comfortable of all the head holding devices used.

49 Patients

It is the purpose of this paper to present briefly the results of its use on forty-nine patients over a six year period of time. In all there were sixty-eight such patients on whom we have started treatment, but we have lost track of nineteen of them, leaving only forty-nine on whom we have complete records.

All of these patients presented here were "hopelessly paralyzed," by which I mean that not a single one of them could hold up his head, balance it, or move it around voluntarily. No one could sit alone, none could use his arms and hands, and none of course, could stand or walk, or talk, and none had bladder and bowel control.

We have however, in this group, purposely eliminated those patients whom we deemed non-trainable. By this I mean those with severe uncontrollable convulsive seizures, microcephalics, severe hydrocephalics, monogolian idiots, etc.

Other Treatments

A few of them had never had treatment before, but most of them had been having physical therapy treatments, massage, stretchings, sing song conditioning movements, reciprocation movements, relaxation training, arm braces, leg braces, "full control" braces, and other forms of treatment such as are in vogue today, and those who had had previous treatment had not improved in the least and were still "hopelessly paralyzed" when we started treatment on them.

Along with our training program these children were simultaneously under the care of a pediatrician

CASE NO.	AGE YRS	TYPE OF C.P.	HOME COND.	TIME FOR HEAD BALANCE (MOS.)	TIME FOR SIT BALANCE (MOS)	GEN PHYS COND	HAND USE IMPROVED	WALKING WITH AID	WALKING UNAIDED
1	4	A	G	5	8	G	YES	YES	NO
2	1½	A	F	4	6	G	YES		YES
3	2	A	G	8	8	P	YES	YES	NO
4	11	X	P	NO	NO	P	NO	NO	NO
5	9	S	G	25	NO	P	NO	NO	NO
6	4	A	G	4	8	G	YES	YES	NO
7	¾	S	F	3	2	G	YES	YES	
8	2	S	G	7	9	G	YES		YES
9	3½	S	G	12	10	G	YES	YES	
10	4	S	F	8	10	G	YES	YES	
11	2	A	G	5	6	G	YES		YES
12	2½	A	G	4	3	G	YES		YES
13	5	S	P	17	22	P	YES	YES	NO
14	6	S	P	25	24	P	NO	NO	
15	1½	A	G	10	8	G	YES	YES	
16	4	A	G	11	10	G	YES	YES	
17	3	A	P	8	20	G	YES	YES	
18	7	X	P	NO	NO	P	YES	NO	NO
19	2	A	G	9	13	G	YES		YES
20	1½	S	G	3	5	G	YES		YES
21	2	S	G	5	7	G	YES		YES
22	2½	A	P	13	NO	P	YES	NO	
23	7	S	F	28	NO	G	YES	NO	
24	4	A	F	25	30	P	YES	NO	
25	3	A	G	12	14	G	YES	YES	
26	2½	A	G	6	8	G	YES		YES
27	6	S	G	14	24	G	YES	YES	NO
28	3	S	G	8	11	G	YES	YES	
29	3	A	G	4	9	G	YES	YES	

Table 1

A - athetoid

S - spastic

X - ataxic

Home condition refers to our estimate of the amount of interest in and help to the child that can be expected from the parents at home.

or their home physician. Those whose general condition was extremely poor at the beginning of treatment were hospitalized, given transfusions, supplemental protein feedings, vitamins, and other measures as the attending physician thought best, to build up the child's health and general condition to normal.

If, at any time, during the training program the patient's general condition again became poor, training was stopped temporarily, and the patient was again hospitalized, and again built up by suitable measures before the training program was resumed.

We have not used any muscle relaxing medicines or sedation routinely in the treatment of any of them.

CASE NO.	AGE YRS.	TYPE OF C.P.	HOME COND	TIME FOR HEAD BALANCE (MOS)	TIME FOR SIT BALANCE (MOS)	GEN PHYS. COND	HAND USE IMPROVED	WALKING WITH AID	WALKING UNAIDED
30	2½	S	G	10	12	G	YES	YES	NO
31	5	A	P	NO	NO	P	NO	NO	NO
32	3	S	G	NO	NO	G	NO	NO	NO
33	2	S	G	8	9	G	YES	NO	NO
34	1½	S	G	4	6	G	YES		YES
35	1	S	G	3	5	G	YES	YES	NO
36	4	A	G	NO	NO	G	YES	NO	NO
37	¾	A	G	2	6	G	YES	YES	YES
38	1	S	G	3	5	G	YES	YES	NO
39	3	A	G	8	NO	G	YES	NO	NO
40	5	A	P	14	NO	P	NO	NO	NO
41	2	A	G	8	NO	G	YES	NO	NO
42	4	A	G	NO	NO	P	NO	NO	NO
43	3	A	G	18	NO	G	YES	NO	NO
44	1½	A	G	6	7	G	YES	YES	NO
45	2	S	G	8	9	G	YES	NO	NO
46	1	A	G	2	3	G	YES	NO	NO
47	1½	S	G	4	6	G	YES	YES	NO
48	2	S	G	6	10	G	YES	NO	NO
49	4	A	P	NO	NO	P	NO	NO	NO

Table 2

A - athetoid

S - spastic

X - ataxic

Home condition refers to our estimate of the amount of interest in and help to the child that can be expected from the parents at home.

Results

The results as given in tabular form are purposefully placed in two separate tables because of the rather long period of time necessary for their training. Those whose treatment was started during 1950, 1951, 1952 and 1953, and who are still being followed are placed in Table one.

Those whose treatment was started in 1954 and 1955 are placed in Table two. The data in Table one therefore, more accurately depict the expected results from the intelligent use of the chair-brace than does Table two, since they were followed for a longer period of time.

Analysis

An analysis of the results in Table one shows that 96.5 per cent learned head balance satisfactorily enough that the headpiece could be removed from the chair-brace. Ninety-three per cent (93 per cent) learned sitting balance.

By this I mean that the retention straps about the shoulders, chest and pelvis were removed, and the back of the chair-brace was folded down little by little to where it was entirely removed, and the child

was able to sit in the chair with no straps or no support against his back. He could, in other words, sit alone.

Eighty-nine and six tenths per cent (89.6 per cent) showed an improvement in the use of their hands. Forty-eight and two tenths per cent (48.2 per cent) learned to walk with help, and 27.5 per cent learned to walk unaided.

The analysis of table two shows that 89.7 per cent learned head balance, 81.6 per cent learned sitting balance, 89.7 per cent improved in hand usage, 73.4 per cent learned to walk with aid, and 4.04 per cent learned to walk unaided.

Again referring to Table one, we note that the shortest period of time necessary to teach a child head balance was three months, the longest twenty-eight months. The average time was 10.5 months.

The shortest time for learning sitting balance was two months, and the longest was twenty-four months. The average time was 11.4 months.

Rationale

The Cerebral Palsy child is a human being. The damage to his brain has not made of him a strange, esoteric animalism whose basic methods of learning differ from our own. The normal infant and child follows a more or less specific pattern or route in his learning processes, so must the Cerebral Palsy child follow this same route for his learning processes, because he learns fundamentally and basically in exactly the same way that the normal child learns.

It is true that the Cerebral Palsy child often learns very much more slowly than does the normal child, and because of this *he needs aid and assistance in learning these early routine activities.* The normal child learns head balance spontaneously. Many of the severely involved Cerebral Palsy children need help to learn it. The normal child learns sitting balance instinctively and without aid. The Cerebral Palsy child often needs help in learning this.

Maturational Stages

In table three are listed the activities which psychologists have called "maturational stages" through which a normal child progresses. We must follow these same stages in the treatment of the Cerebral Palsy child. *To attempt to teach the patient to walk when he cannot sit alone or balance his head is foolish. It simply can't be done. A child must first learn to hold his head up before he can sit alone. He must learn to sit alone before he can stand alone, and he must be able to stand alone before he can learn to walk.* The Cerebral Palsy child must be trained in accordance with these same maturational stages, otherwise much time and effort is wasted.

The Cerebral Palsy chair-brace described here enables the child to follow this same route, such as the normal child follows, and it is an aid to him in learning these elementary activities.

Discussion of Results

The normal infant learns to balance his head and move it around voluntarily in all directions by the time he is three months old. Reference to Table one shows that the average time necessary for these severely involved Cerebral Palsy children to learn head balance was 10.5 months, regardless of his chronological age when treatment was started.

The normal infant learns to sit alone at six months of age. The average time for these severely involved Cerebral Palsy children to learn sitting balance was 11.4 months after having learned head balance.

Long Period

This long period of time necessary for these children to learn these two simple, elementary, activities is due mainly to the fact that they were the most severely involved of all Cerebral Palsy patients. This is the group of patients who are usually considered as completely hopeless, and whose parents are so often told that the child is hopelessly paralyzed and that no improvement can be expected.

These results show that improvement can be expected in a high percentage of them if they are treated properly with due regard to their maturation stage[4] and if they are given the help necessary in teaching them the early initial activities,[4] of head balance and sitting balance, before progressing to more complicated activities.

Second Stage

We have found from experience that usually the second stage, that is, learning sitting balance, takes longer than learning head balance, but once a child has learned head balance and sitting balance, and some use of his hands, learning to walk does not take so long a period of time as the combined times of these other two stages.

The Cerebral Palsy chair-brace is therefore a most efficient and effective aid in helping to teach a child head balance, sitting balance, and the early use of his hands. A high percentage of the Cerebral Palsy children who are classified as "hopelessly paralyzed" have responded slowly but well to its use. We are highly pleased with the results we have obtained by its use.

Table 3

MATURATIONAL STAGES OF MOTOR DEVELOPMENT

1. *Learning head balance.*
2. *Learning sitting balance (and in this stage begins to learn speech and use of hands).*
3. *Learning standing balance (becomes increasingly adept at all previous activities).*
4. *Learning walking.*

BOOKS

Reviews of Two Significant Works on Physiology

By Jack C. Postlewaite, M. D., El Paso

ION EXCHANGE AND ABSORPTION AGENTS IN MEDICINE
The Concept of Intestinal Bionomics

By Gustav J. Martin, Sc. D.
307 Pages — Price $7.50

Physicians are presented a "high-brow" review of the biochemistry and physiology of the intestinal bionomics of the human body by Dr. Gustav J. Martin, Research Director of the National Drug Company in Philadelphia, Pa. The introductory chapters of the book are basic biochemical principals of ionization and the biological significance of ions.

Close reading of the book from cover to cover will reward the physician with the real significance of the cryptic chapters. The interesting mechanisms of chemical balance in the gastro-intestinal tract are made lucid and summarized in each chapter.

The processes of life are reduced to ionic factors of synergism and antagonism. The chemistry of anion and cation exchange resins which have come into vogue are discussed with the view point of body fluid economy. Their chemistries and physiological applications are noted in the field of intestinal hyperacidity, duodenal ulcer and ulcerative colitis.

Here the anion resin is capable of absorbing hydrochloric acid, reducing the pepsin and lysozyme of the gastro-intestinal tract. The cation exchange resins are given exhaustive consideration in their effect on salt retention related to heart, kidney and liver disease.

Stimulating Glimpses

It is amazing to find the doctor of science well informed in medical concepts as he presents subjects related to the therapy of peptic ulcer and the alterations by the pathology of the bio-dynamics of the gastro-intestinal tract. In his medical and clinical sections I find stimulating glimpses of the future uses of the exchange resins. He describes extensively the toxic hypokalemic effects of the cation resin and the possible toxic side effects in amino acid metabolism and trace metals economy.

The concluding chapters of the manuscript are of unusual interest in their discussion of the medical applications of the combinations of the exchange materials. I gained an insight into time honored and almost unknown drugs used in the past decades. Charcoal, magnesium trisilicate, bentonite and kaolin, were of unusual interest.

Chelating Agents

Chelating agents have not as yet come into their rightful place in clinical medicine. The phenomena of chelation is of fundamental bio-physical significance and may even explain phenomena of the creation of life and decay of death. Chelate was coined in 1920 by Morgan and Drew and taken from the Greek word "chele" meaning the great claw of the lobster. The application of chelation is made to molecular structures in which rings are formed by primary and secondary valence forces.

Trace ion physiology and the possible pathological alterations balance under conditions of disturbance of the internal milieu of the human organism are cited. Chelation is not limited to gastro-intestinal chemistry but is the bio-chemistry of anti-coagulants, catalysts and enzymes.

The summary chapter on the concept of intestinal bionomics is a quick sketch of the gastro-intestinal tract related to vitamin synthesis and destruction, antibiotic and dietary influences of the intestinal flora, and the toxins produced by intestinal bacteria in health and disease.

Highly Recommended

Intellectual awakening is stimulated by this review of bio-chemical and physiological concepts of human pathology. By-passing this book will occur unfortunately because of its title and because of the research degree (D. Sc.) of its author. I can highly recommend at least a passing glance of the final chapters before this book is eliminated from your personal library.

PHYSIOLOGICAL BASES OF MEDICAL PRACTICE

by Charles Herbert Best and Norman Burke Taylor
Williams & Wilkins Co. - Baltimore 1955
6th Edition 1357 Pages

Extensive revision in the sixth edition has incorporated much new material of medical and research biophysiology elucidated in the past five years by medical clinics and research centers. The sections of the book follow the same pattern as previously published. Physiology, biochemistry and anatomy is correlated in the many chapters under the nine sections.

Of particular interest is the section on the circulation of the blood where in detail the excitability, contractility, rhythmicity, and conductivity of cardiac muscle is reviewed. This basic physiology prepares the reader for more complex considerations of heart muscle metabolism, heart circulatory function, electrocardiographic interpretation, and clinical pathological studies. The vasomotor mechanisms of cardiovascular disorders and special regional circulatory

(Continued on Page 246)

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

CASE No. A-587

CASE PRESENTATION BY DR. FRANK C. GOLDING
HISTORY PREPARED BY DR. M. NATHAN KLEBAN
EDITOR - DR. FREDERICK P. BORNSTEIN

History:

A 67-year-old unemployed married white man was admitted to El Paso General Hospital for the first time on January 7, 1956, because of loss of bright blood by mouth and passage of bright and dark blood by rectum several hours before admission.

For a number of years, until three weeks before entry, the patient had consumed alcohol in significant amounts, and to a certain extent as a substitute for food. About four or five years before admission, the patient was suspected of having a carcinoma of the pancreas on the basis of severe abdominal distress.

Meperidine Addiction

Recovery from meperidine addiction was said to have been assisted by beatings inflicted by a brother. The patient suffered from bronchial asthma in childhood and again beginning twelve years ago, becoming more severe for the last three years, when he began to have breathlessness, a constant cough, and copious amounts of white sputum. At some time he had experienced "blackout spells." He was told that he had heart disease. For a number of months he had experienced pain in the precordial region.

Labored Breathing

One week before admission, the patient began to experience severely labored breathing, orthopnea. He remained in bed, became withdrawn, and began to pass black, tarry stools. Admission to the hospital followed the passage of blood by rectum and what was thought to be the coughing up and vomiting of blood.

While a young man, the patient had been treated with a "red medicine" for gonorrhea, underwent a hemorrhoidectomy 26 years ago, and for an unspecified time had found it necessary to stand over a fire in order to initiate this urinary stream.

The father was said to have died from paresis. A son-in-law had had pulmonary tuberculosis.

Physical Examination:

T. 99.8, P. 104, irregular (type not stated), R. 24, B. P. 90/54. The patient appeared younger than the chronological age, state of nutrition seemed fair, and he was in moderately acute distress. There was pallor of the mucous membranes; sibilant and sonorous expiratory rales were heard diffusely over the lung fields; there was increased A-P diameter of the chest cage; heart sounds were distant with PMI located in the 5th LICS in the AAL; radial pulse was 84 and apical rate 120-130; a slightly tender liver edge was felt three finger-breadths below the right costal margin under a soft abdominal wall with an equivocal fluid wave elicited; there was a macular rash over the abdomen, which also displayed a brownish pigmentation, and spider angiomata were described on the upper trunk; there was a 1 plus pitting edema of the lower extremities; there was an equivocal right Babinski.

Hospital Course:

Following admission, the patient pleaded throughout the night for a "shot" although he did not complain of pain. Oxygen was administered by nasal tube, later by mask. He vomited bright blood on the first day, clots on the second, none thereafter.

Bloody stools were passed on the first, fourth and fifth days; tarry stools on the second and seventh days. Temperature ranged from 99-100. Mental state varied from clarity and lucidity to confusion, disorientation, and evidence of delusions and hallucinations on the last day.

Respiratory Distress

He was almost always restless, in respiratory distress, and frequently agitated, combative and disturbed. On two occasions, he managed to knock over the I-V stand, and 3-I-V cut-downs were necessary because infusions could not otherwise be kept running. On the third day, arm-to-tongue Decholin circulation time was 16 seconds and venous pressure 22 cm. of saline.

However, shortly after this procedure levophed was administered when hypotension was noted. Again on the seventh and eighth hospital days, levophed was given. A total of ten units of whole blood and two units of plasma were given. Other medications included aminophylline, thiomerin, phenobarbital, atropine, combiotic, alevaire and a partially successful attempt to give vitamins, iron, Brewer's yeast and Diamox orally.

Third Day

On the third hospital day the patient complained of colicky abdominal pain. The patient was seen by two consultants who agreed with the house staff's impression of bleeding from esophageal varices. It

was hoped that the blood loss could be replaced, the bleeding controlled, and a porto-caval shunt performed when the first two objectives were accomplished.

However, on the eighth hospital day whole blood and levophed were unable to reverse shock, the patient went into a stupor, then a coma, respirations became Cheyne-Stokes and ceased. A resuscitator obtained from the delivery room was not effective. Intracardian adrenalin had a transient effect in initiating a heart beat.

Laboratory Studies:

January 7, 1956 - Urinalysis: Amber, clear, acid, S. G. 1.020; albumin faint trace, sugar 2 plus, acetone negative, WBC 3-6, RBC 1-3. WBC 12,750; stabs 1, segs 72, lymphs 27; Hb. 7.2 gms. Hematocrit 23. Kline exclusion negative.

January 8, 1956: Hb. 5.9 gms., hematocrit 19.

January 9, 1956: Hb. 7.0 " " 19.

January 10, 1956: Hb. 7.6 " " 25.

January 11, 1956: Hb. 7.6 " " 28.

January 12, 1956: Blood urea nitrogen 26.6 mg. %

January 13, 1956: Serum bilirubin, indirect 0.5, direct 1.0; serum albumin 2.34, globulin 2.265; chlorides 98 mEq/L
Hb. 7.4 gms., hematocrit 26.

January 14, 1956: Hb. 4.0 " " 17.

Electrocardiogram, January 7: Auricular fibrillation with a ventricular rate of 115; vertical electrical axis; low T in all leads. "Myocardial damage, non-specific."

X-Rays:

Chest film, January 7: Advanced bilateral pulmonary emphysema. Barium swallow, fluoroscopy, January 12: Esophagus negative for evidence of varices. Bilateral pulmonary emphysema. Findings consistent with accompanying bronchiectasis.

X-RAY DISCUSSION

Dr. Vincent M. Ravel:

The only examination that we were able to perform was the chest. The chest was examined on two occasions, January 7th and January 12th. The examination on the 12th consisted of a second attempt to demonstrate esophageal varices. Now, the main findings, of course, are the advanced bilateral emphysema, the flattening of the diaphragm, the obscuration of the pulmonary sulci, the fibrosis, particularly in the posterior lung fields, and a possible bronchiectasis.

The esophagus, as you may see, is well visualized and at no time were we able to demonstrate filling defects consistent with esophageal varices. That would be really definitive except for the fact that after a varicose vein has bled, it collapses, and so we are still not able to say with certainty that there were no varicosities. However, the general regularity of the mucosal pattern suggests that this is most unlikely. Thus, we were not able to demonstrate a source of bleeding from the esophagus.

A Physician:

I am asking for information. My impression, and I may be very much in error, is that a bronchiectasis is usually diagnosed by x-ray only with a lipiodol injection. Is there another way that you can suggest that diagnosis?

Dr. Ravel:

There are secondary signs. In most cases, proven bronchiectasis, particularly the diffuse cylindrical type, has signs which consists of increased markings at the base — both bases, bilaterally — together with the thickened diaphragmatic pleura. Whenever we see those, we feel that that is enough evidence to suggest the diagnosis of bronchiectasis. Of course, if you can prove it by instillation of opaque media, so much the better, but in most of the cases where you have a proven bronchiectasis, those signs will be present.

DIFFERENTIAL DIAGNOSIS

Dr. Frank C. Golding

I imagine you have all read this case history and you realize that it is a very complicated problem. I think there are four major groups of symptoms we have to consider. The first is the fact that the patient was bringing up blood through his mouth which could have been hemoptysis or it could have been hematemesis.

The patient passed blood from the bowel. I consider that as one of our problems. The second is that the patient obviously had a bronchopulmonary disease. Thirdly, he had a cardiovascular disease. And fourthly, he had a liver disease.

Then, there are three rather minor things which I think probably are secondary but we must mention them, and that is the history of difficulty in urination, mental symptoms, and the abdominal pain which is mentioned in the past and during his hospital admission.

History of Asthma

I am going to start with the bronchopulmonary disease. We have a history of asthma in this patient in his childhood and for the past twelve years. He had symptoms with his illness of dyspnea, orthopnea, coughing and sputum.

The sputum was apparently not very purulent. No note was made. It was a clear sputum and he brought up no blood with the sputum. X-ray and clinical findings showed a barrel chest. There were expiratory musical rales characteristic, of course, of asthma, and the X-rays showed emphysema.

So, we obviously have a case here of emphysema, probably based on asthma from the X-ray point of view, and the question of infection or bronchiectasis.

Cardiovascular Disease

Next, we'll discuss the cardiovascular disease. There were two etiological factors here which could produce a cardiovascular condition. The man was old enough to have arteriosclerosis and he had a condition in the bronchopulmonary system which would cause pulmonary hypertension, so we have arteriosclerotic and pulmonary hypertensive etiological factors.

Again, we have symptoms, dyspnea, orthopnea for three years, precordial pain within the last month. The physical findings showed an auricular fibrillation and that was verified by the electrocardiogram. The patient had some edema of the ankles, a questionable or probable ascites and an enlarged liver. There was an increased venous pressure and the electrocardiogram showed non-specific abnormalities.

Liver Disease

Thirdly, we have liver disease. There is a history of what the record says is significant use of alcohol in the past and a dietary deficiency. In addition, we have from the cardiovascular point of view congestive heart failure, or symptoms and signs suggesting that.

So we have two factors in the etiology of the liver disease — those suggesting cirrhosis in the etiology and those suggesting congestive failure. The physical findings show an enlarged, tender liver, again questionable ascites, spider angiomata of the skin, a borderline icterus, a low serum albumin and a normal globulin showing a reversal of the serum-albumin-globulin ratio.

Bleeding

Now, we come to the more important group and that is the bleeding. If this man was bleeding through the mouth from a hemoptysis, I think our first diagnosis, the one of choice, would be bronchiectasis, because the majority of pulmonary hemorrhages originate in bronchiectasis. We have to mention tumor because we always have to keep that in mind in a questionable diagnostic problem.

Hematemesis

I think it is more likely that this was a hematemesis and naturally the first diagnosis we think of is the one the history said was considered most seriously, that of esophageal varices. The negative X-ray is against that. Another point that is against it is the fact that there was bright blood in the stools. I have never seen that — bright blood in the stools — in esophageal varices bleeding.

Peptic Ulcer

We have to think of peptic ulcer which occurs more frequently in patients with liver disease. This patient had a bad dietary history and was a very nervous individual. We have to consider the possibility of gastritis. That is the most common organic disease of the stomach, the one that is most commonly ignored, and most people do not realize that you can have serious, perhaps fatal, hemorrhages from gastritis.

Colitis

Now, to consider the bleeding from the bowel. We have, first of all, the usual sequence that the blood is coming from the upper gastrointestinal tract, from some of the conditions we mentioned above. However, we have to think of the second lesion in the lower gastrointestinal tract. One of them, that we have to think about, is a Meckel's diverticulum. Patients who have severe hemorrhages and require transfusions from Meckel's diverticulum pass bright blood from the stool. We have to think of colitis.

The most likely type I think here is amoebic.

Diverticulosis

We have to think of diverticula. Up until recently, most of us felt that gross hemorrhage from the diverticula was uncommon. But there was a recent review in GASTROENTEROLOGY with a series of cases showing massive hemorrhages are not uncommon in diverticulosis.

Neoplasm

Again, we have to think of neoplasm in the colon. Now, the fact that this patient brought up a lot of blood through the mouth and passed a lot of blood through the colon, or the bowel, and particularly that some of it was bright blood, forces us to consider the fact that there may be multiple areas of hemorrhage in this case.

When we all went to medical school we were taught that it is incorrect to make several diagnoses if one would explain the group of symptoms, but occasionally that rule is wrong.

One of the possibilities, I think we have to consider here, is a multiple source of bleeding in the gastrointestinal tract caused by a prothrombin deficiency, due to liver disease. We have all seen cases of prothrombin deficiency and I am sorry that there was no prothrombin time done on this patient, or at least it wasn't in the record.

Minor Symptoms

Now, to discuss briefly the rather minor symptoms that occurred. We have that of mental symptoms. The patient had blackouts for years. He had confusion, hallucinations and restlessness. The Babinsky was reported the one time as equivocal. These symptoms, I think, are most likely to be due to the annoxia from the pulmonary disease and the cardiac disease. Or, they could be due to the liver. But we have to consider that there is another factor causing these.

The difficulty in urination: first of all, he had a history of gonorrhea treated in the old fashioned way, which frequently produced strictures, so he possibly could have just had a urethral stricture.

Carcinoma

I think with a man this age we certainly have to consider carcinoma of the prostate. No mention was made of a prostatic examination, so I know nothing of that. He had episodes of abdominal pain during his hospital admission and before. We have to think of peptic ulcer. As I mentioned, they are common with liver disease. He had a diagnosis made of pancreatitis or pancreatic carcinoma in the past clinical diagnoses. People who use alcohol are prone to pancreatitis and people with liver disease are prone to pancreatitis. We certainly have to rule out — or Dr. Bornstein will have to — pancreatitis and carcinoma of the pancreas. The uremia, I believe, is secondary to the hemorrhage and we don't have to explain that further.

Diagnosis

The diagnosis that I would consider the most likely would be, probably, peptic ulcer and some lesion in the colon, very possibly, or likely aggravated by a prothrombin deficiency in both cases.

Dr. William I. Coldwell:

Dr. Golding has presented this case very well. There are a couple of points I would like to make. I think I have seen bright red rectal bleeding in cases of esophageal varices. The only problem with that is that these people with their portal hypertension will have bleeding hemorrhoids, which can bleed very severely and can give bright red blood.

I would like to ask if any liver function tests were done, or if they were left out purposely from the protocol. It would seem to me a patient with a severe liver damage, perhaps some other tests besides the bilirubin and proteins would have been done which could have given us some lead as to whether the patient's jaundice and liver disease was primarily liver disease or possibly some other obstructive type of lesion.

The man had had jaundice and there is always the possibility of an obstructive type of jaundice that could be present in addition to an alcoholic cirrhosis or liver disease which could have complicated matters.

Dr. Bornstein:

Just let me repeat here again that the history is written by Dr. Kleban in complete independence from the Pathology Department and that he does not omit any facts that are available on the chart.

Dr. William R. Gaddis:

There is one point in the protocol that occurred to me might be of interest, and that is the fact that this man had brownish pigmentation on his abdomen and in addition a fine macular rash.

I notice also that his blood chlorides were 98 milli equivalent which seems to me to be somewhat depressed, and the engaging thought occurs to me that this patient maybe could have had some other disease like the classical Addison's disease which had been thrown into an extreme streptococcic condition by means of a GI hemorrhage from another source.

I don't know whether that would have anything to do with this or not, but it certainly makes me wonder if we might have been dealing with an adrenal disease in this patient long before he ever was admitted to the hospital. Of course, he had a hypotension when admitted.

Clinical Diagnosis:

Bleeding esophageal varices.

Dr. Golding's Diagnosis:

Bleeding peptic ulcer.

Pathological Diagnosis:

Bleeding peptic ulcer.
Aortic stenosis.
Nodular glandular hyperplasia of the prostate.

PATHOLOGICAL DISCUSSION:

Dr. Bornstein:

This was the body of an elderly white man, who measured 175 cm. in length and weighed 65 kilograms. The skin had a pale anemic appearance, typical of exanguination.

Inasmuch as there has been considerable discussion of the findings in the chest, we will review them briefly. The main abnormality consisted of a typical aortic stenosis. The main interest in this case naturally centers on the gastrointestinal tract. There were no varices in the esophagus. The stomach was filled with freshly clotted blood which had formed a cast of the stomach.

Ulcer

An ulcer was found in the posterior wall of the stomach, 4 cm. below the cardia. The ulcer extended 10 cm. transversely across the stomach and had eroded the wall so that pancreatic tissue formed the base of the stomach. In the upper pole of the ulcer, a bleeding artery was visible. The two nodules which are seen in the lower pole of the ulcer (Fig. 1) represent islands of pancreatic tissue.

On microscopic examination, a typical peptic ulcer was seen with erosion and destruction of an artery (Fig. 2).

Symptoms Explained

These findings adequately explain the major clinical symptoms including the pain which very well may have been pancreatic in type considering the severe involvement of the pancreas.

The urinary findings referred to by Dr. Golding

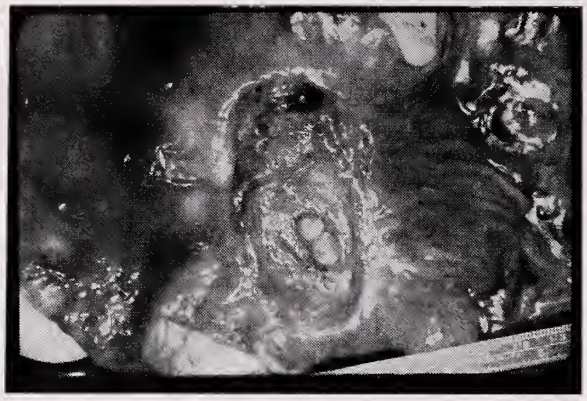


Fig. 1 — Bleeding Peptic Ulcer. The bleeding point is in the upper pole of the ulcer. Islands of pancreatic tissue are seen near the lower pole of the ulcer.



Fig. 2 — Microscopic. Section through bleeding artery showing destruction of the wall by the ulcerative process.

are explained by the presence of a nodular hyperplasia of the prostate.

Summary

In summary, this represents a case which illustrates the problem of acute intractable gastrointestinal hemorrhage preceded by a rather misleading history. In this particular case, death was due to the bleeding from a peptic ulcer.

Diuretic . . . . . .

(Continued from Page 233)

3 gm. daily should be used in patients receiving mercurial injections over a long period of time in order to prevent chloride depletion. Amminophylline, or decholin, ammonium chloride or Diamox may be used to enhance the mercurial. Diamox orally is useful for maintenance. Finally, for best results, patients requiring diuretic therapy must be instructed, regulated, and followed closely both by clinical observation and laboratory analyses, to avoid toxic reactions and serious electrolyte disturbances.

Reviews of Two . . . . . .

(Continued from Page 241)

systems are considered in well edited chapters of this section.

Section on Respiration

The experimental and clinical features of tissue respiration and the pathology of hypoxia has been brought up to date in the section on respiration. Section six on metabolism and nutrition provides a review of protein, fat and carbohydrate metabolism in the light of modern biochemistry. The influences of hormones, enzymes and specific organ pathology are considered.

Tagged tracer ion studies are cited in the discussions of intermediary oxidation processes. The endocrine or ductless gland systems are current with the recent literature. The stress syndrome can not be referred to directly from the index but may be recognized in the chapters referring to the pituitary adrenal glands.

The momentous review of physiology has always been the reference book of the pre-clinical and clinical medical student. He could not well afford to be ignoraant of this reference during his formative years. To re-examine this material again, brought up to date, will cause the doctor of medicine to realize that he can never be far removed from basic physiology in the practice and understanding of good clinical medicine.

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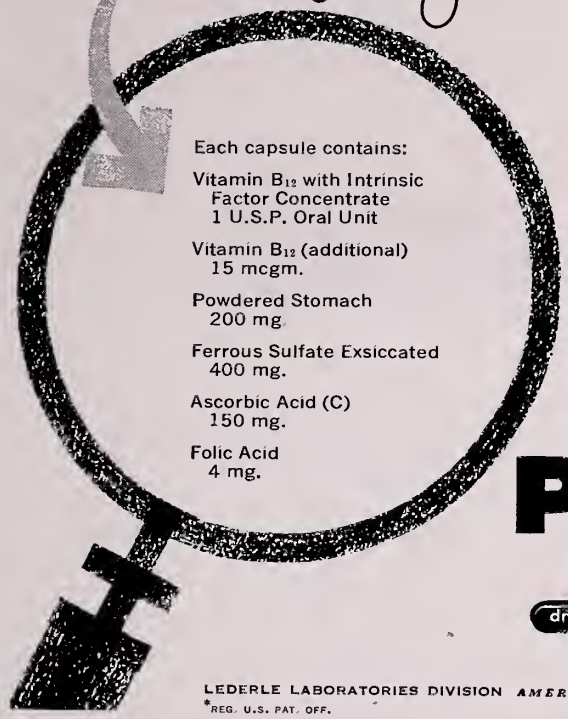
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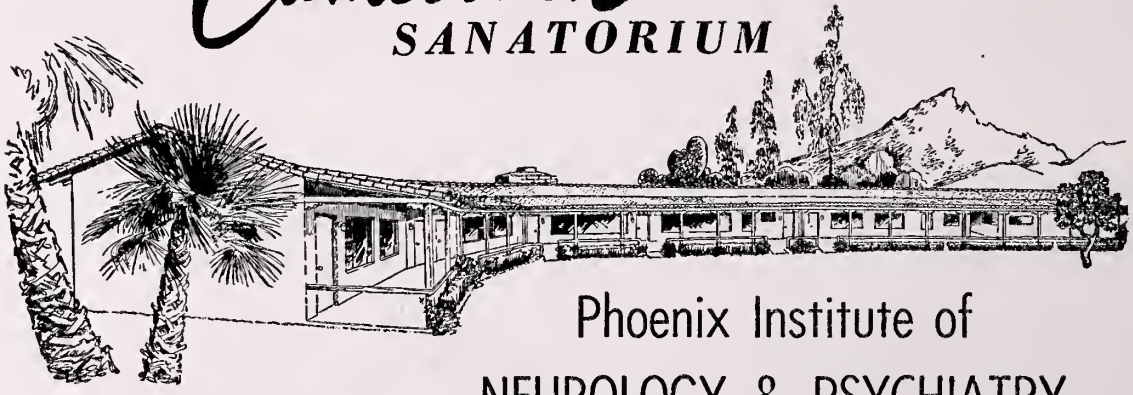
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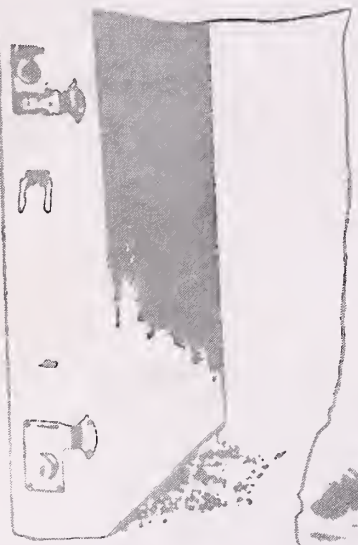
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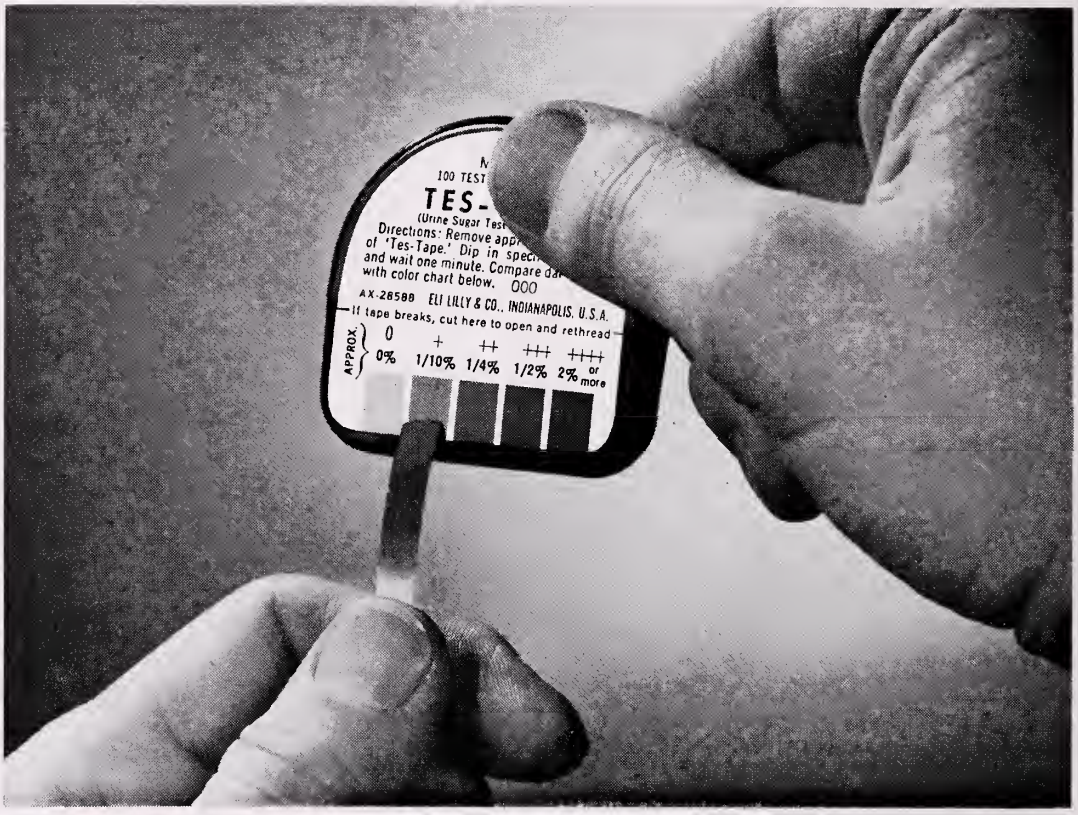
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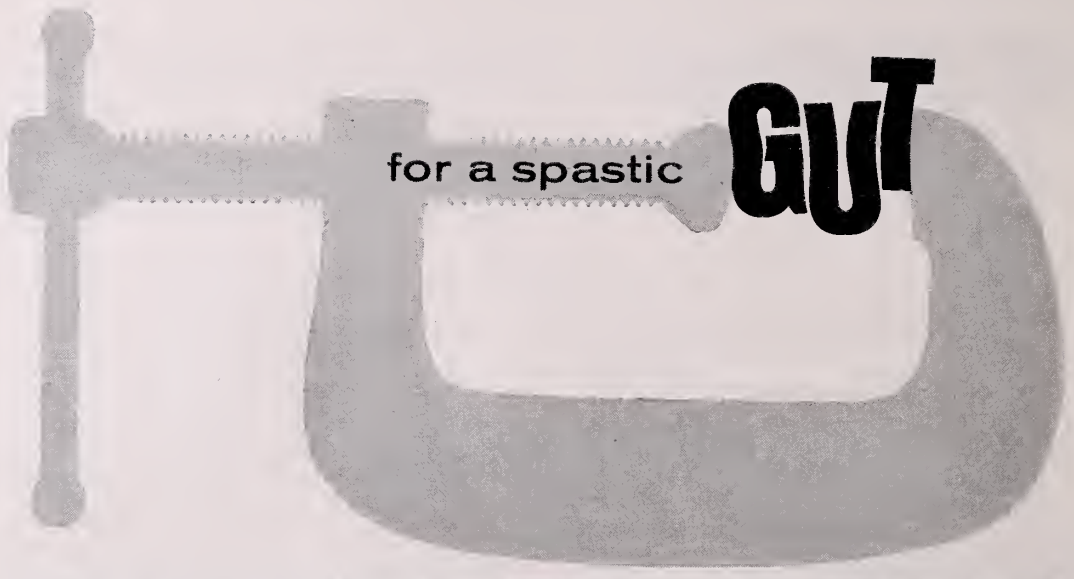
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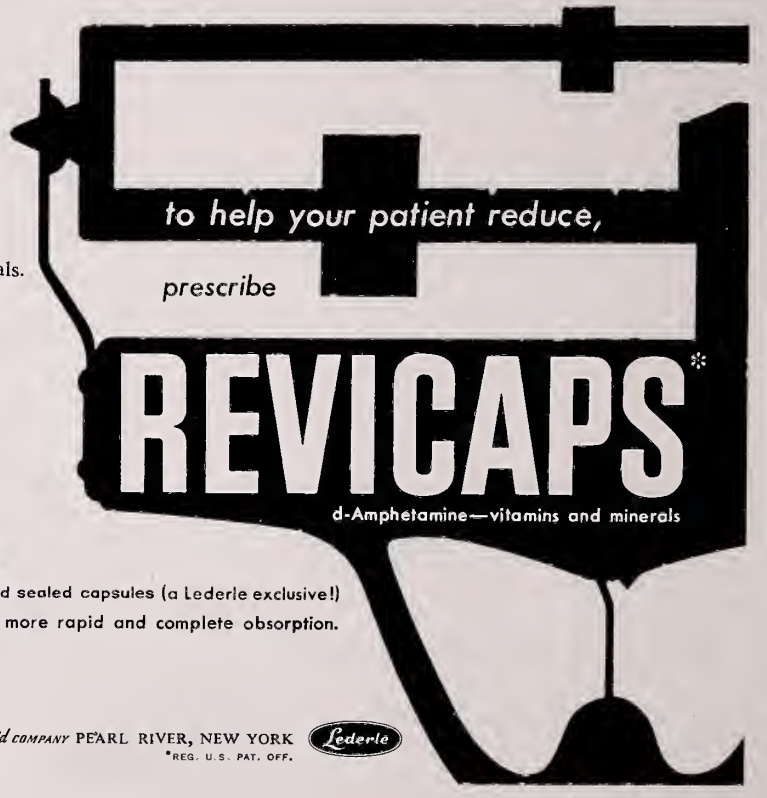
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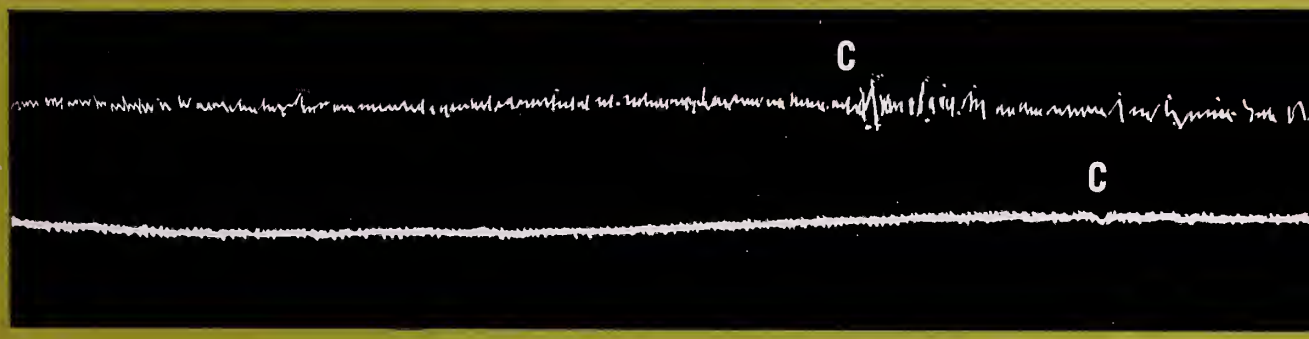
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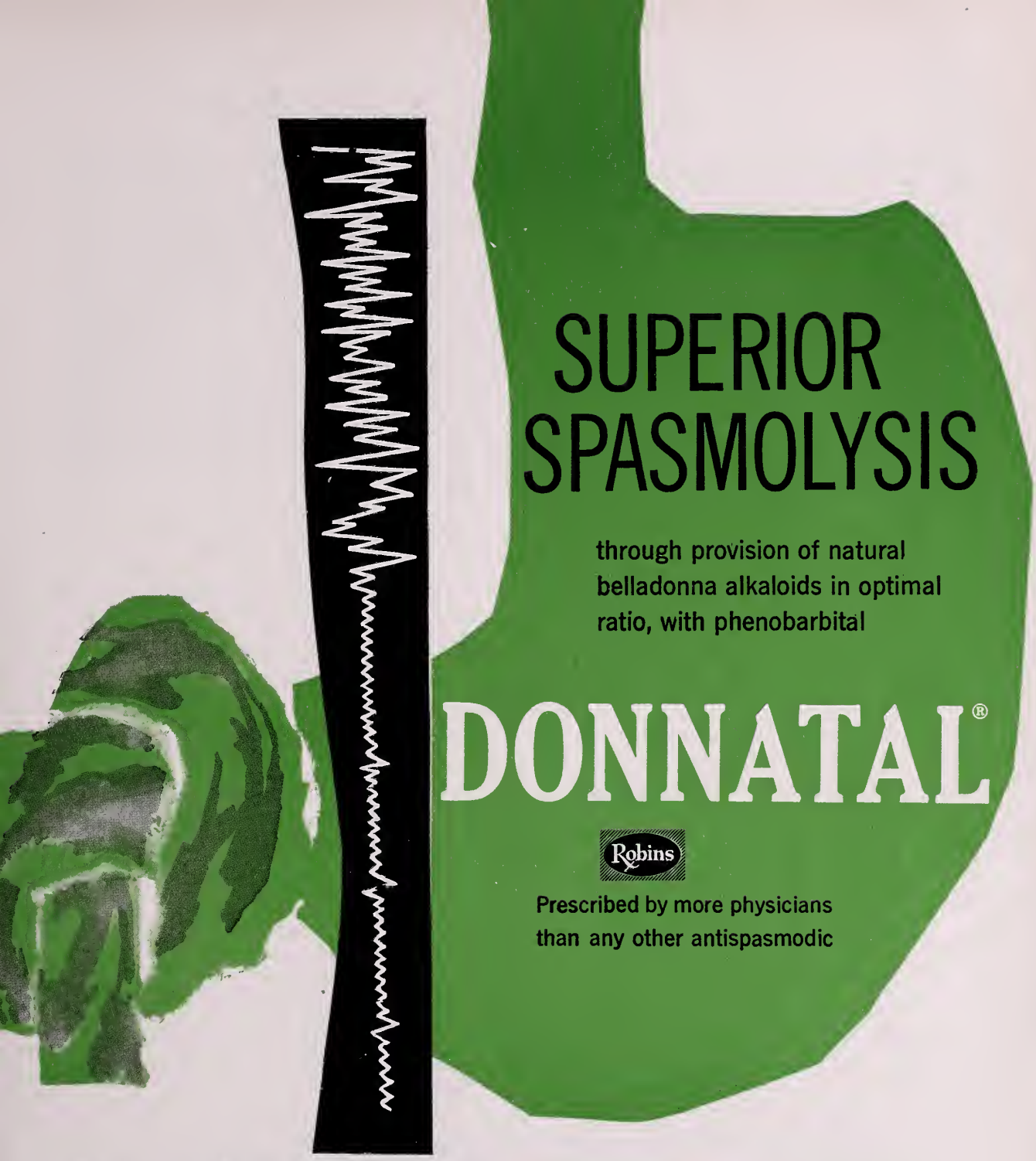
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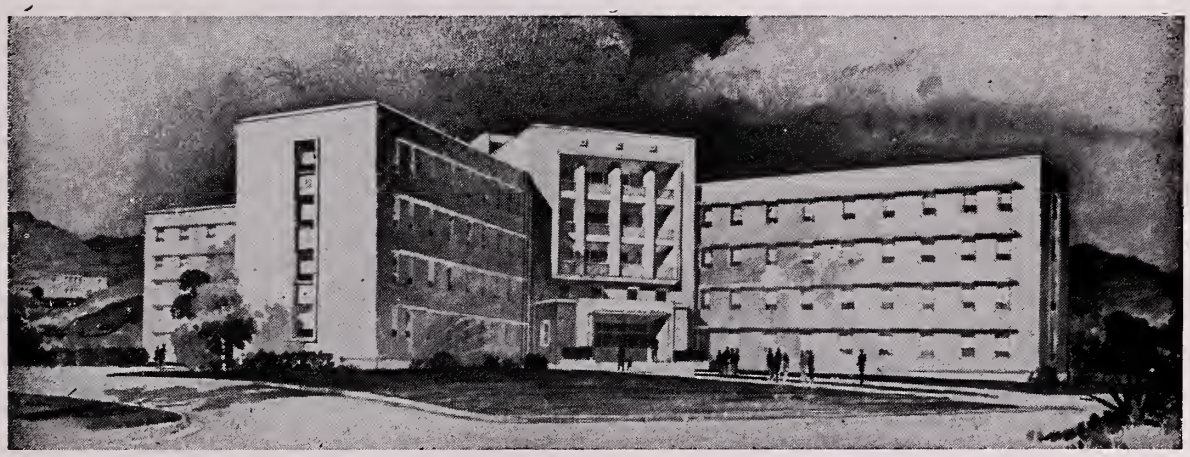
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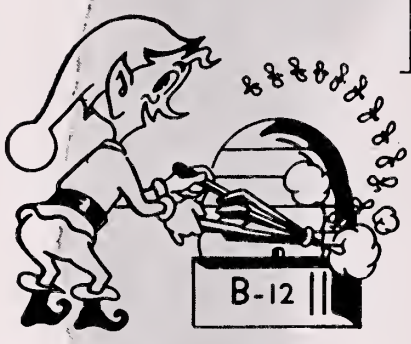
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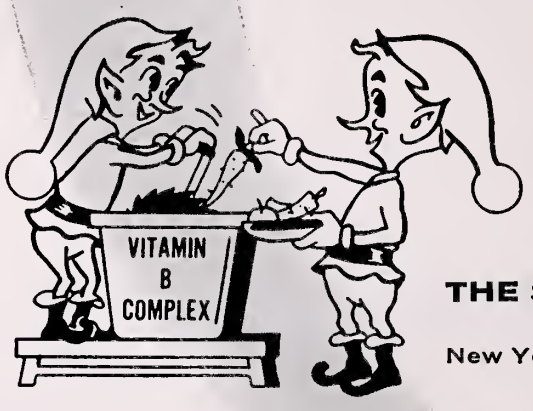


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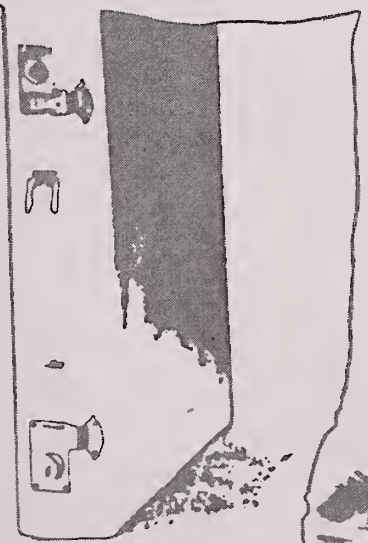
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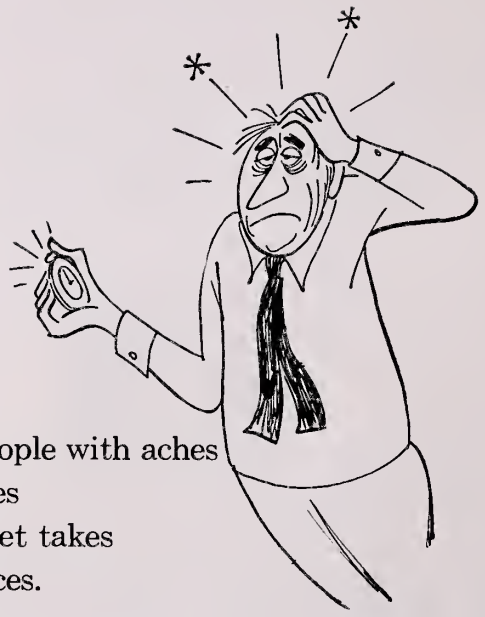
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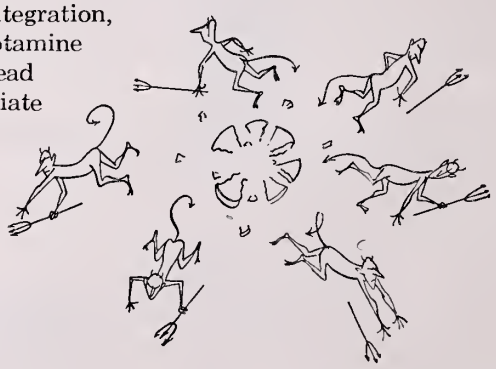
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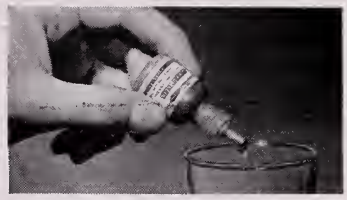
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1. Seifter, J., et al.: To be published. 2. Fazekas, J.F., et al.: M. Ann. District of Columbia **25**:67 (Feb.) 1956. 3. Mitchell, E.H.: J.A.M.A. In press.

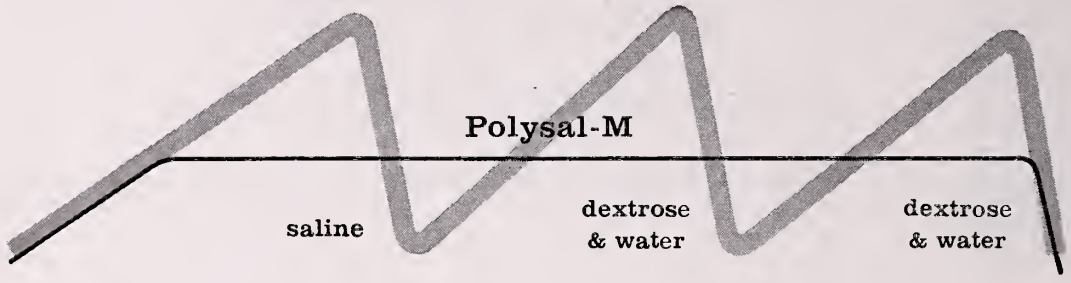
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Talbot, Crawford and Butler* have re-emphasized the importance of homeostatic mechanisms of the body in fluid and electrolyte therapy. Their report shows that in the presence of adequate urine flow, the body is able to retain or excrete water and electrolytes in accordance with body needs.

*Talbot, N.B., Crawford, J.D., and Butler, A.M., "Homeostatic Limits to Safe Parenteral Therapy". New Engl. J. Med., 248, 1100 (1953)

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Southwestern MEDICINE

VOL. XXXVII MAY, 1956 No. 5

CURRENT THERAPY

Steroids and the Collagen Disorders

By Jack A. Bernard, M. D., El Paso

The collagen disorders include a group of diseases with different clinical manifestations but similar tissue changes. These changes involve the collagen, that is, the intercellular substance, and include inflammation, proliferation, and degeneration, pathologically known as "fibrinoid degeneration."

The disorders most commonly included are disseminated lupus erythematosus, periarteritis nodosa, scleroderma, dermatomyositis, rheumatic fever, and rheumatoid arthritis.

Disseminated lupus erythematosus occurs predominately in females. Joint pains are usually the initial manifestation of the disease. Fever occurs and the rash typically occurs in a butterfly pattern over the bridge of the nose and face, but may be just in the upper extremities and chest. Enlargement of the liver and spleen may be present and enlarged lymph glands are usually present. Renal damage and urinary abnormalities are common and are the most important factor in determining the prognosis of the individual patient. Characteristic L. E. cells are always found.

L. E. Phenomenon

The L. E. phenomenon has been observed in other conditions, namely miliary tuberculosis, Apresoline disease, in patients with penicillin hypersensitivity reactions. In patients with penicillin hypersensitivity, the L. E. cells disappear in two to three months.

In treating disseminated lupus erythematosus the initial dosage of Cortisone is 20 to 40 mg. intravenously or 200 to 400 mg. orally. For maintenance 50 to 100 mg. daily. Meticorten dosage is 20 to 30 mg. initially and five to 20 mg. daily for maintainence. The L. E. cell does not disappear from the blood and the sedimentation rate may remain elevated. Death is usually due to progressive renal failure.

Massive Cortisone Doses

During a crisis of acute lupus erythematosus, massive doses of Cortisone, up to 2300 mg. in 24 hours, have been used with favorable results. Therefore, extremely large doses may be helpful in such instances.

Periarteritis nodosa occurs predominately in males. It has been divided into two groups (by Blankenhorn, Zeek): Classic periarteritis nodosa and hypersensitivity angiitis. Classic periarteritis nodosa has been divided into primary and secondary groups. The primary group is characterized by a long clinical course with gastrointestinal symptoms, peripheral neuropathy, usually hypertension and occasionally eosinophilia. Secondary periarteritis nodosa included cases of renal disease with hypertension in which a few lesions of periarteritis nodosa had been initiated a short time before death. In these, the findings of periarteritis nodosa were masked by those of severe renal disease and hypertension.

Fulminating Disease

The cases of hypersensitivity angiitis were manifested clinically as a fulminating disease characterized by fever, skin rash, nephritis, myocarditis, and frequently, a history suggesting recent exposure to some antigenic substance.

It is important that there be early recognition of the disease followed by prompt hormonal treatment in order to prevent residual vascular damage.

In scleroderma, the earliest symptoms are usually swelling and stiffness of the skin of the fingers, hands, upper extremities, face and tongue. Pain in the joints is almost always present. The patient may have difficulty in opening his mouth. Bronze pigmentation of the skin may be present.

Skin Biopsy

Thickening and sclerosis of the subcutaneous tissue is evident and skin biopsy confirms the impression of scleroderma.

X-rays may show pulmonary fibrosis and esophagel studies may show constriction, lack of motility or dilatation.

Treatment consists of Cortisone 300 mg. daily initially, to be reduced to 50 to 100 mg. daily. Prednisone 30 mg. daily is not associated with sodium or water retention or sustained increase excretion of potassium. Higher doses may be used but 100 mg. daily by mouth for 4 successive days has produced sodium retention.

In 1955 there was a joint report by the Medical Research Council of Great Britain and the American Heart Association of a cooperative clinical trial of ACTH, Cortisone, and Aspirin in rheumatic fever. Of 497 patients treated, 162 were treated with ACTH, 167 with Cortisone, and 158 with Aspirin and the cases were similar in each group.

No Evidence

There was no evidence that any of the three agents resulted in uniform termination of the disease. And on all treatments, some patients developed fresh manifestations during treatment. Treatment with either of the hormones resulted in more prompt control of certain acute manifestations but this more rapid disappearance was balanced by a greater tendency for the acute manifestations to reappear for a limited period upon cessation of treatment ("rebound phenomenon").

Thus treatment with the hormones led to more rapid disappearance of nodules and soft apical systolic murmurs. However, at the end of one year there was no significant difference between the three treatment groups in the status of the heart.

Larger Doses

It has been mentioned that perhaps larger doses of the hormones over a longer period of time may have resulted in less residual murmurs.

There seems no doubt that the hormones cause a more prompt response in rheumatic fever and would therefore be indicated, even life-saving, in severe fulminating rheumatic pancarditis. Treatment of patients chronically ill and with no cardiac involvement would be just as well treated with aspirin.

The steroids have been used for six years now in the treatment of rheumatoid arthritis and it is generally agreed a continuous protracted treatment is usually necessary and that only partial control can be hoped for with doses which do not excite serious adverse reactions. The steroids merely suppress and mask the manifestations of the disease; they do not arrest it. They do not prevent the successive involvement of additional joints, nor halt the progressive disintegration of cartilage and bone.

Newer Drugs

The newer drugs prednisone and prednisolone seem to exert the same suppressive and ameliorating effect as Cortisone with a dosage ¼ as great. They cause much less disturbance of electrolytes than Cortisone so that a low salt diet, diuretics and supplementary potassium salts are rarely needed. However, the other adverse effects may occur more frequently perhaps, particularly the gastrointestinal reactions, the psychoses, and hyperglycemia.

Spies and his associates have recommended the combination of steroids and salicylates. The proper mixture of salicylates produces an effective antirheumatic agent in many patients, and the administration of such a mixture cuts down the danger of toxic reactions and restores the patients in many instances to employability. Further studies along these lines are awaited.

Many Dangers

Many dangers of steroid therapy have been mentioned and are common knowledge, namely: Sodium retention, potassium loss, edema, hypertension, hyperglycemia; these commonly result from the administration of Cortisone and Hydrocortisone, but sodium retention and potassium loss do not occur with Prednisone and Prednisolone in therapeutic dosages thus far used.

Other more serious side effects of steroid therapy include adrenal atrophy and crisis and osteoporosis. The administration of the adrenal cortical hormones may suppress adrenal function and induce adrenal cortical atrophy. This atrophy and the accompanying functional impairment of the adrenal cortex may outlast for a long time the withdrawal of Cortisone. Such adrenal atrophy and impaired function may then lead to acute adrenal cortical insufficiency in the face of a sufficient stress, such as a surgical operation. Such postoperative deaths have been reported from simple and uncomplicated major surgical procedures.

Recommendation

To prevent postoperative adrenal cortical insufficiency the following is recommended: 200 mg. of Cortisone intramuscularly 48 hours, 24 hours, and one to two hours before operation. Postoperative cortisone therapy should be continued: 25 mg. I M every four to six hours.

It should be emphasized that oral preparations of Cortisone have a rapid and clinical metabolic effect but the duration of action is short lived (from six to eight hours). The full clinical and metabolic effects with the intramuscular administration are delayed for several days and also persist for up to four to five days after cessation of Cortisone administration. This is due to a slow release of Cortisone from the intramuscular sites.

Acute Crisis

In the acute crisis of adrenal insufficiency intravenous hydrocortisone has largely supplanted cortical extract and is specific in the therapy of acute crisis. It should be noted that intramuscular hydrocortisone acetate is relatively inert because of its insolubility.

Osteoporosis and compression fractures of the vertebrae have been reported, particularly in the older age groups and more commonly in post menopausal women. Androgen estrogen therapy is recommended in such patients receiving the steroids for a protracted course, but it should be noted that such concomitant therapy has not always been effective in preventing these complications.

Summary

The dosage requirements of present day steroids are as follows:

	Average Daily Initial Dose	Average Daily Maintenance Dose
Cortisone	100 mg.	50 mg.
Hydrocortisone	80 mg.	40 mg.
Metacortandracin	20-30 mg.	5-20 mg.

The steroids are recommended for acute severe rheumatic fever in large doses (300 mg. Cortisone or more daily) and for long periods of time (at least three months plus).

The combination of steroids and salicylates shows

(Continued on page 286)

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

By Andrew M. Babey, M. D., Las Cruces, N. M.

(Continued)

50. "In general, the higher the temperature elevation, the more serious the prognosis. Prolonged low-grade fevers, i.e., those in which the temperature never exceeds 100° to 100.5° F., while occasionally the first manifestation of serious illness, may persist for years without the appearance of any other objective manifestation of disease." Paul B. Beeson; *Veterans Admin. Tech. Bull.;* March 15, 1951; Section 10-72; p. 1

51. "It is also important not to overestimate the significance of low-grade fever in children, particularly those under the age of two years. Temperature regulation mechanisms are imperfectly developed in early life, and it is common for children to have moderate temperature elevations after exercise or even after emotional upsets. If a child is developing normally, is not anemic, and shows no other evidence of disease, low-grade temperature elevations should not cause too much concern." *Beeson; loc. cit.;* p. 2

52. "While still a major disease in some parts of the world, malaria has virtually disappeared from the United States. Relapse of infection after a free interval of several years is most unusual." Beeson; *loc. cit.;* p. 3

Polyarthritis

53. "Polyarthritis is also rare in brucellosis; the only joints commonly affected are those of the spine." Beeson; *loc. cit.;* p. 3

54. "Fever is one of the common manifestations of neoplastic diseases. Hypernephroma may be associated with daily chills and fever reaching 104-105° F. Carcinoma of the stomach or pancreas, especially if it be associated with metastasis to the liver, may cause considerable temperature elevation," Beeson; *loc. cit.;* p. 4

55. "Fever is characteristic of any disease in which *hemolysis* occurs." Beeson; *loc. cit.;* p. 5

56. "Petechiae in the skin of the legs or ankles are often present in elderly males and have little significance." Beeson; *loc. cit.;* p. 6

57. "Enlarged nodes over the femoral triangle are more likely to be helpful in diagnosis. Reference has already been made to the importance of search for nodes high in the axilla or behind the inner ends of the clavicles. It should be emphasized that marked enlargement is not necessary, since metastatic carcinoma or tuberculosis can frequently be found in nodes which are barely palpable." Beeson; *loc. cit.;* p. 7

Sarcoidosis

58. "There is probably no other disease distributed as widely throughout the body that is accompanied by so few symptoms. Autopsies on persons who have died from a totally unrelated condition have disclosed extensively disseminated sarcoidosis that had progressed during life without arousing the slightest suspicion of its presence." Warfield T. Longcope; *loc. cit.;* Section 10-73; p. 10

59. "Sarcoidosis may persist for years in a quiescent state in one or more organs. This is particularly true of affected lymph nodes, but pulmonary shadows have remained unchanged for four to 10 years, splenomegaly for seven years, and osseous lesions for 17 years. During these periods there have been no known exacerbations." Longcope; *loc. cit.;* p. 11

60. "The head is grasped by the examiner and shaken, using short quick movements from side to side and forward and backward. The eyes are immediately observed for nystagmus. In patients who have a latent spontaneous nystagmus, this test may activate it for a few seconds." J. R. Lindsay; *loc. cit.;* Section 10-78; p. 3

61. "The auditory and vestibular parts of the eighth cranial nerve separate on entering the medulla. The association of tinnitus and deafness with the attack of vertigo is therefore evidence of a peripheral origin." Lindsay; *loc. cit.;* p. 5

Vertigo Diagnosis

62. "The definite diagnosis of a central origin of vertigo is usually made on the basis of the associated symptoms and signs of a disease of the central nervous system, such as headache, incoordination, disturbances of muscle tone, pathological reflexes, and involvement of other cranial nerves." Lindsay; *loc. cit.;* p. 5

63. "On the basis of the findings on examination, it is possible to divide vertigo of vestibular origin into three main groups according to localization of the lesion which is responsible for it:

> (1) Vertigo which is a symptom of a definite disease of the central nervous system as indicated by the related neurological signs. (2) Vertigo which can be localized to the inner ear or eighth cranial nerve because of its association with tinnitus, or deafness, or both. (3) Vertigo in which the localization cannot be established with certainty. There are no associated auditory symptoms and no other related signs which would clearly localize its origin to the central nervous system. This group probably comprises more than 50 per cent of all cases presenting the complaint of dizziness." Lindsay; *loc. cit.;* p. 6

64. "The *increased pigmentation,* so characteristic of Addison's disease, is nearly absent in pituitary

insufficiency even when it is accompanied by secondary adrenal cortical atrophy die to insufficient ACTH. It therefore appears that normal adrenal cortical function suppresses some pituitary factor which is responsible for the increased spread of melanin in the pigment layer of the skin." Peter H. Forsham; *Vet. Admin. Tech. Bull.;* March 30, 1950; Section 10-62; p. 4

65. *"Intra-abdominal neoplasm, Hodgkins disease, lymphoma,* and *regional enteritis* may often be accompanied by pigmentary changes indistinguishable from those of Addison's disease." Forsham; *loc. cit.;* p. 16

Scientific Mind

66. "I do not believe that there is such a thing as "the scientific mind." Most scientists are quite ordinary folk, with ordinary human virtues, weaknesses, and emotions. A few of the most eminent ones indeed are people of superlative general ability, who could have done many things well; a few are freaks, with a freakish capacity and intuition in their special fields, but an extreme naivete in general affairs." Professor A. V. Hill: *American Scientist;* July 1955; p. 456

67. "Siderosis, it would seem, is not necessarily permanent, and if no more iron dust is inhaled the iron oxide is gradually eliminated from the lung parenchyma . . . . . we may conclude that iron oxide is essentially an inert dust." Perry; *loc. cit.;* p. 463

68. "This condition (Stannosis) one may regard, therefore, as benign pneumoconiosis similar to the siderosis of electric-arc welders." Perry; *loc. cit.;* p. 464

69. "Evidence is accumulating that in the great majority of cases modern medical treatment, with its emphasis on postural drainage and the use of antibiotics, greatly limits the disability from this disease. The cases most in need of surgery are usually the least likely to benefit from it, on account of the extent of the disease or poor general condition. Despite the excellent results of many operations, there are good grounds for a conservative approach to the treatment of bronchiectasis." *loc. cit.;* p. 490

70. "It would appear to us that the danger to the life of a woman with antenatal thrombphlebitis is not sufficiently great to warrant the use of the present anticoagulants as a routine. They should not be used in the last four weeks of pregnancy if at all possible, but if a pregnant woman is having multiple pulmonary emboli then the risk to the foetus will have to be taken and anticoagulants given." D. E. Price; *British Medical Journal;* Sept. 17, 1955; p. 721

71. "If, as dust, the oxides of metals are inhaled into the lung and remain in its lymphatics they will throw X-ray shadows, the density of which varies with the atomic weight of the metal. Metals such as calcium (atomic weight 40-08) which is found in industries using limestone, marble, lime, cement, and gypsum, produce little radiological shadowing, at most a little arborescence." Kenneth M. A. Perry; *The Lancet;* Sept. 3, 1955; p. 463

72. "I would urge that scientific people do not get an exaggerated idea of their importance or of their moral superiority, but regard themselves as citizens who have the same moral obligations of honesty, kindness, courage, and tolerance as others. They have no more right to insulate themselves from the common affairs of life, or the common obligations of citizenship, than have other people." Professor A. V. Hill; *American Scientist;* July 1955; p. 456

73. "I have as patients," he told me, "four men who have the Nellis Foster syndrome — a banker, two businessmen and a medical specialist. They all have these points in common: called to New York at higher salaries and status than they ever had before, told that they could have anything they needed in point of assistance and equipment, and made fully aware that what was expected of them in return were merely miracles or discoveries or astonishing results. Thus they have all been deprived of any excuse for failing; and now that two to four years have passed but no miracles appeared, they have a varying assortment of hypertensions, gastric ulcers, allergic symptoms and depressions — to say nothing of some very unhappy and bewildered wives." Alan Gregg; *Harpers Magazine;* August 1955; p. 73

Dr. Schuessler Honored By Southern Methodist

Dr. Willard W. Schuessler, El Paso, a Diplomate of the American Board of Plastic Surgery, was one of three persons to be named as outstanding alumni for 1956 by Southern Methodist University March 25.

Others were Dr. Tom W. Bonner, nuclear physics expert from Rice Institute, and Dr. J. Earl Moreland, president of Randolph Macon College for Men at Ashland, Va.

Dr. Schuessler, a past president of the Southwestern Medical Association, is a former Associate Professor of Plastic Surgery at Southwestern Medical School and also held the surgery residency at Baylor Hospital. For his work during World War II in the Armed Services, Dr. Schuessler was awarded the Legion of Merit.

Steroids and the . . . .

(Continued from page 284)

promise in the treatment of rheumatoid arthritis.

Pre-and postoperative steroid therapy should be instituted in patients who have received steroid therapy within six to 12 months prior to the surgery as severe adrenal crises are a serious postoperative hazard in such patients.

Osteoporosis and compression fractures of vertebrae are likely to occur in the older age group, particularly in postmenopausal women, who must be maintained on continued steroid therapy, in spite of concomitant androgen estrogen therapy.

Synergistic Acne Therapy

By Kenneth C. Baker, M. D., Tucson

The complex inflammatory disease of the sebaceous glands known as acne vulgaris is ordinarily easy to recognize and not difficult to treat. Occasionally, however, the chronic, resistant, severe, cystic and pustular type of acne appears, which usually presents quite a problem in therapy.

The psychic ravages, physical scars, disfigurement, social and business embarrassment inflicted upon the unfortunate individual affected by this variety is a serious matter. Recalcitrant, stubborn acne is often immune to the usual regime of diet, keratolytics, hormones, vitamins, ultra-violet rays, x-rays etc. Those remissions which are induced by x-rays and other agents are frequently followed by complete relapse.

A brief review of the observations of others yields some interesting facts and serves as a guide in the delineation of this disease. Acne vulgaris has been described[1] as an inflammatory process of the skin involving the sebaceous follicles. The appearance of the skin is typified by the presence of plugged follicles, comedones, papules and pustules. Frequently seborrheic scaling, excessive oiliness and thickening of the skin are secondary characteristics[2].

Several Factors

The development of acne has been attributed to one or more factors. Not all inclusive, but indicative of them are the following: hormonal imbalance[3], psychic consideration[4], unsuitable diet[5], halogens[6], constipation[7], anemia[8], hypothyroidism[9], avitaminosis[10], cosmetic habits[11], postural habits[12], occupational factors[13] and focal infection[14].

In consideration of the many possible causes of acne, suggested treatment is quite varied and includes the following:

A) Oral — administration of antibiotics, sulfonamides, vitamins, hormones, etc.

B) Hypodermic — Vitamin A, vitamin B_{12}, crude liver extract, chorionic gonadotropin, estrogens, progesterone, etc.

C) External (topical) — Dermal cleansing with various soaps and detergents, local application of sulfur, resorcin, sulfurated lime solution, lotio alba, salicylic acid, ammoniated mercury, antibiotics, vitamin A, etc.

D) Physical — X-rays, cold quartz lamp irradiation, etc.

Many Causes

Obviously, the multiplicity of causes, symptoms, forms, etc. obviate the development of a single therapeutic measure which would successfully medicate all cases. The selection of an appropriate regime and medication for each form and stage is largely a matter of dermatologic evaluation and experience. The search for a therapeutic measure which will yield optimal results in the greatest number of patients has been relentless.

The purpose of this study was to test an improved form of topical and systemic medication in the treatment of certain types of acne, (cystic, pustular, nodular) which have generally proved resistant to therapy and in which the lesions caused scarring. In order to make certain that the treatment under investigation had an extremely high therapeutic index it was decided to restrict its use to those patients who had limited or no response to the usual methods of therapy. The medications employed in these clinical trials were "Rezamid Lotion"* and "Rezamid Tablets." In conjunction with both the lotion and tablets. when necessary, co-therapy was employed such as thyroid, progesterone, Vitamin A, ultraviolet and x-rays. Fourteen patients used only the lotion and tablets.

Flesh Colored Vehicle

The lotion consisted of a flesh colored vehicle of zinc oxide, talc, propylene glycol, alcohol, water and inert coloring matter and containing as active ingredients N^1sulfanilylacetamide 8.5 per cent, sulfur 5 per cent and resorcin 2 per cent.

The tablets consisted of a mixture of 0.125 mgs. of sulfadiazine, sulfamethazine, sulfamerazine and sulfapyridine respectively. Many clinicians believe that sulfur is *the most* important single factor in the treatment of acne vulgaris. The valuable keratolytic and antiseborrheic action of resorcin when employed in conjunction with sulfur is equally well recognized.

The role of bacteria in the development of follicular plugging and pustular lesions associated with acne has been controversial[15]. Nevertheless, the current use of oral antibiotics indicates that most physicians recognize the existence of more than a casual relationship between the disfiguring and ugly pustular element and bacterial organisms. In view of this theory the synergism of 8.5 per cent N_1Sulfanilylacetamide and resorcin and sulfur as antibacterial

*Supplied by the Dermik Pharmacal Co., Brooklyn 8, N. Y.

and antiseborrheic agents requires only brief further elaboration. Previous investigation has established [16] that antibiotics, although quite important in the management of cutaneous bacterial infections have shortcomings, such as limited spectra of effectiveness, allergenic potentialities, instability, toxicity, etc. In addition a comparison of in vitro antibacterial activity of N_1Sulfanilylacetamide and four commonly used antibiotics, employing identical strains of organisms indicates that it would require a combination of bacitracin and neomycin together with polymixin B to equal the effective range of N_1Sulfanilylacetamide.

Method of Procedure

One hundred and six patients were treated. "Rezamid Lotion" was applied to the affected areas twice daily and in the more severe cases an additional application was made at bedtime. Clinical experience with this lotion showed an index of efficacy not previously encountered with any other topical application. Obdurate, obstinate and extensive pustular acne lesions responded extremely well; considerable improvement often noticeable within the first week of application.

Although cystic lesions did show some improvement with Rezamid Lotion, more improvement was evident when Acnestrol Lotion (containing 1.75 mg. of diethylstilbesterol dilaurate per gram) was employed instead.

When the severity of the eruption required oral therapy in conjunction with topical measures, three to five "Rezamid Tablets" per day were prescribed. This proved effective and was advantageous from the viewpoint of low cost and freedom from characteristic side effects of the antibiotics.

The accompanying chart illustrates in graphic form a summary of the results obtained with "Rezamid Lotion" in cystic and pustular acne. As indicated in the chart this therapy produced an extremely high percentage of successful results. In a total of 106 cases of acne, 62 patients were completely arrested, 28 were 85 per cent improved, 10 were 75 per cent improved and 6 showed little or no improvement.

Summary

Rezamid Lotion proved to be an extremely effective treatment in pustular acne vulgaris. In extremely severe cases Rezamid tablets seemed to hasten improvement. The tablets were employed in 22 patients in conjunction with the lotion with no evidence of any G. I. upset or any drug eruption noted. In 106 cases treated with Rezamid Lotion, only 2 patients developed a sensitivity. No contraindications were found even when x-rays or Cold Quartz therapy were used in conjunction with Rezamid Lotion. The latter was most acceptable with female patients in masking facial blemishes. The total of effective result was about 90 per cent and it is my opinion that this medication should supplant most of the drugs used to treat this type of acne.

Summary of Case Histories

Classification of cases	Number of patients	Complete (100%) Clearance	Partial (85%) Clearance	Partial (75%) Clearance	Little or no Improvement
Severe	70	42	20	5	3
Moderate	28	18	5	3	2
Mild	8	2	3	2	1
Totals	106	62	28	10	6

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Texas Postgraduate Session Scheduled in El Paso May 20

The El Paso branch of the University of Texas Postgraduate School of Medicine will hold its next program in the El Paso County Medical Society's Turner Home at 1301 Montana Street on May 20th, according to Dr. Ralph H. Homan, assistant dean.

Subject for the meeting will be Orthopaedics. Dr. George W. Eggers, Professor of Orthopaedic Surgery at the University of Texas, Galveston Branch, will be one of the speakers and will talk on "Surgery Practicable in Cerebral Palsy".

Others on the agenda and their subjects are:

Dr. Morton H. Leonard, El Paso, "Treatment of Fractures of the Os Calcis, and Treatment of Ankle Sprains"; Dr. David M. Cameron, El Paso, "Fractures of the Femur"; Dr. Louis W. Breck, El Paso, "Intramedullary Fixation of Long Bone Fractures"; Dr. S. Perry Rogers, El Paso, "Fractures in Children"; Dr. W. Compere Basom, El Paso, "Complications Resulting from Fractures" and Dr. A. E. Luckett, El Paso, "Colles Fractures".

MEETINGS

Address of Dr. Ralph E. Campbell At Ob-Gyn Meeting in Tucson

A highly successful and well-attended third annual meeting of District 8 of the American Academy of Obstetrics and Gynecology was held in Tucson, Arizona, April 9-11.

An honored guest of the meeting was Dr. Ralph E. Campbell, Professor of Obstetrics and Gynecology at the University of Wisconsin School of Medicine, who is president of the American Academy of Obstetrics and Gynecology. The text of his opening address follows:

"As a former president of the National Federation of Obstetric and Gynecologic Societies, I was on the ground floor when the Federation was faced with the decision as to whether it was to disband or to change its name and become active as the American Academy of Obstetrics and Gynecology with a different philosophy and function.

Considerable Doubt

"At that time there was considerable doubt among many of our honorable men in the specialty as to whether the Academy would attract and absorb the best in our specialty and as to whether the Academy would be paralleling other organizations in our specialty. There were those who felt that there were already too many organizations in our specialty having their annual meetings but with little purpose or activity in between, with many of these organizations operating by the policy of restriction and exclusion.

"The Academy idea took hold when it became apparent that this organization was to be formed for the purpose of bringing better obstetrics and gynecology down to the "grass roots" level every place, everywhere in this country and Canada, and was to open its fellowship to thousands of obstetricians and gynecologists whose qualifications and limitations met the requirements of the Academy, and to give them for the first time, and deservedly so, a chance to funnel their professional activities and academic interests in an organization of national assembly and recognition.

Unified Profession

"An organization whose efforts were to extend themselves not only to assembly meetings but to bring forth a unified profession for the purposes of care of patients, education and administration. The latter was made official Academy policy some time later.

"There is always doubt in some organizations as to the rule of the majority relative to policy making and perpetuation of its officers. I wish to emphasize at this point that when the Academy was organized by its founding fellows, it was set up so that the rule of the majority would make the policies and determine the direction and success of the organization.

"I wish to show you that the Academy is democratic and is not run by a hierarchy with an official family in a position to perpetuate itself. You, the fellows, determine the officers from the local level to the national offices. Each fellow in his section submits names for nomination of the Section Officer with the three fellows mentioned most frequently becoming the slate for the election of the single Section Officer. Each Section Officer is responsible to his fellows for keeping them informed as to the purposes and policies of the Academy. His term is for three years and he can not be re-elected.



From left: Dr. C. B. Hodgkinson, Birmingham, Michigan, national secretary of the American Academy of Obstetrics and Gynecology; Dr. George E. Judd, Los Angeles, vice chairman of District 8; Dr. Allen McMurray, Houston; Dr. R. Glenn Craig, San Francisco, chairman of District 8; Dr. Ralph E. Campbell, Professor of Obstetrics and Gynecology at the University of Wisconsin School of Medicine, and president of the American Academy of Obstetrics and Gynecology.

Section Chairmen

"It follows that the Section Chairmen become the District nominating committee to submit the names of one or more nominees for the office of District Chairman to the fellowship of the whole district. The District Chairmen, in conjunction with the national officers pass on the qualifications of all applicants for fellowship, become a part of the governing Board of the Academy as a whole and consider problems arising in the Districts with submission of reports and recommendations to the Executive Board as a whole of which they are a part. The District Chairman's tenure of office is for three years and he can not be re-elected.

"The nominating committee for the officers of the Academy, which include the President, President-elect, First Vice President, Secretary, Assistant Secretary and the Treasurer, are appointed by the incoming President from a list of at least three fellows submitted by each District Chairman. One of the fellows from the submitted list acts as a member of the nominating committee representing his district, and the most recent past President acts as the Chairman of this committee.

Standing Committees

"It can be further pointed out that in the selection of standing committees, there has been an honest attempt, at least on my part, to have all districts represented, which I definitely feel should be a policy. In the smaller committees this is obviously impossible.

"I have mentioned our medical assemblies, notably the annual and district meetings, and they are of paramount importance. However, you must agree with me, that if we are to carry out and extend the value of this organization, beyond the scope of medical assemblies, then our standing committees must be carefully chosen, must understand clearly their purpose and function and the specific direction and activity to be taken. One of the most important committees is the Committee on Committees, which may sound absurd, but this committee, which is automatically composed of former past Presidents, determines the function and direction of the different standing committees.

Statistical Study

"At the present time our Maternal Welfare Committee is extending its activities in conjunction with the Department of Health, Education and Welfare in Washington, D. C., and the American Academy of Pediatrics, to a Study of Uses of Statistics on Maternity and Newborn Infant Services in Community Hospitals away from Medical Centers. It is hoped to find practical application for these statistics.

"Our Professional Standards Committee is more than active in developing a Manual on Professional Standards.

"The Public Relations Committee is making decisions on lay publications as well as on many problems in general and those within our several committees and their activities.

"The Legislative Committee has had several problems placed before it in Washington and has been very active.

Advisory Problems

"The Committee on the Care of the Fetus and Newborn has been confronted with many advisory problems and is also interested in a liaison problem between it, the American Academy of Pediatrics, and the American Academy of Cerebral Palsy as related to the obstetric aspects of cerebral palsy.

"The Audio-Visual Committee has been attempting to set up the cataloguing of practical and useful audio-visual aids and stimulating the development of such mechanisms, devices and procedures as can be applied to the teaching of obstetrics and gynecology.

"The Professional Relations Committee has an increasing responsibility referable to checking practices of fellows who have failed to continue the limitation practice in the specialty. All reported cases are referred to this committee.

Unified Specialty

"It is worthy of mention that the Academy has been called upon to assert its policy relative to the unified specialty in the organization of Departments in medical schools.

"It is hoped that in the field of education the Academy will have direct representation upon the American Board of Obstetrics and Gynecology in the near future.

"We have definitely indicated our position and interest in obtaining recognition on the Joint Committee on Accreditation of Hospitals.

"The Academy is constantly being consulted by numerous organizations from all over the country as to matters of policy and other details of our specialty, indicating our growing recognition as a representative of our specialty.

"Time does not permit me to mention all of our committees and their important activities but I have attempted to present to you some that I thought would be of interest at this time.

Biblical Terms

"I am proud of the Academy. Its growth has been phenominal. It has absorbed the best in our profession. In Biblical terms, I have faith in it, great hopes for its future and have not been too charitable in its assessment.

"Of no little importance, the American College of Surgeons asked the Academy to submit from our membership three members who might be acceptable to them as their direct representative to the Joint Committee on Hospitals — manifesting our recognition by the American College of Surgeons.

"Our Resident Programs have been outstanding and commendable as a departure from most medical meetings in recognizing the younger men capable of presenting papers before the Academy."



Over 300 attended the Western Jamboree at the Westward Look Guest Ranch on the outskirts of colorful Tucson. A view of the ranch is shown at left.

FUN in the SUN

SPECIAL PICTURE REPORT

DISTRICT VIII, AMERICAN ACADEMY OF OBSTETRICS AND GYNECOLOGY

TUCSON,
April 9-11

SCIENCE in the SHADE



Residents who presented papers at the meeting were (left to right) Dr. Gaylord Figge, University of Washington, Dr. Jack Miller, University of California Hospital, Dr. John Voskian, Harbor General Hospital, Dr. Lee Noll, Los Angeles County General Hospital, and Dr. Frank Potestion, University of Colorado. A feature of the meeting was the limitation of each paper, including all presented, to 10 minutes.







1.—Left to right, Dr. Gordon Hippert, Tucson, a member of the entertainment committee and a speaker, and Mrs. H. S. Rhu, Jr., Tucson, a member of the entertainment and hospitality committee.

2.—Left to right, Dr. C. J. Newcomb, a member of the Tucson committee, Jean Weinberger, Los Angeles, Milex Company, and George Stubbs, Los Angeles, Milex manager for eleven western states and Hawaii.

3.—Left to right, Dr. S. M. Gospe, San Francisco, and J. Z. Mauler, Phoenix, Stuart Co.

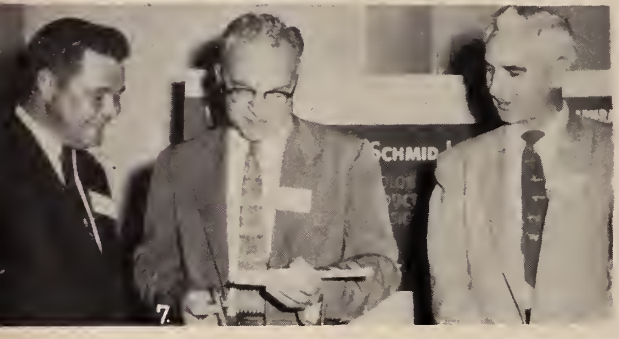
4.—Left to right, Gregg Phalen, Tucson, Boyle & Co., Harrold Lane, Boyle & Co. Southern California sales manager and Dr. E. E. Hunner, Palo Alto, California.

5.—Left to right, Dr. M. D. Bivens, Albuquerque, a speaker, Dr. Preston Brown, Phoenix, a speaker, F. A. Springer, San Diego, Walker Laboratories, G. T. Smith, Los Angeles, Walker Laboratories district supervisor, and Dr. George Thorngate, Monterey, California.











6.—Left to right, David Stockdale, Los Angeles, Marlyn Co., Herb Shaw, Los Angeles, Marlyn district supervisor, and Dr. L. D. Sprague, co-chairman of the meeting.

7.—Left to right, J. E. McBride, Julius Schmid, Inc., Sunnyslope, Arizona, Dr. E. J. Layton, Seattle, and Leonard Moore, Alhambra, California, Schmid district manager.



8.—Left to right, Dr. Reid L. Beers, Glendale, California, Dr. C. L. Roberts, Glendale, and Dr. H. M. Imerman, Beverly Hills.

9.—Left to right, Dick Mace, Los Angeles, and Chris Christopherson, Los Angeles, both of Squibb, and Dr. R. K. Hausmann, Tucson, a member of the entertainment committee.



10.—Mrs. L. D. Sprague, Tucson, a member of the entertainment and hospitality committee.









1.—Hungry guests and wives watch steaks being broiled at the Westward Look Guest Ranch.

2.—Left to right, rear, Mrs. Charles S. Fine, Seattle, Mrs. J. H. McEvers, Tucson, Mrs. F. M. Nace, Tacoma, and (foreground) Dr. F. M. Nace, and Mrs. G. A. Janssen, Tucson. Mrs. McEvers and Mrs. Janssen were members of the entertainment and hospitality committee.

3.—The Tucson Boys Chorus provided entertainment at the Western Jamboree.

4.—Dr. and Mrs. James Chapman with daughter Margot from Boise, Idaho.













5.—Left to right, Dr. John Freed, Denver, Dr. Frank Potestion, Denver, and Dr. and Mrs. Tom Foley, Denver.

6.—Left to right, Dr. Ray Bock, Tucson, Dr. H. S. Rhu, Jr., Tucson, co-chairman of the meeting and one of the speakers. Dr. Hollis Brainard, Tucson, president of the Southwest Obstetrical & Gynecological Society, Donald Richardson, Chicago, executive secretary of the American Academy of Obstetrics and Gynecology.

7.—Left to right, Dr. Ralph E. Campbell, national president, Mrs. John Freed, Denver, and Dr. C. B. Hodgkinson, national secretary.

8.—Left to right, Dr. and Mrs. Charles R. Nevins, Phoenix, and Dr. and Mrs. George Goossen, Las Cruces, N. M.

9.—Dr. & Mrs. Raymond L. Young of Santa Fe, N. M. Dr. Young is chairman of the New Mexico section.

10.—Left to right, foreground, Dr. J. H. McEvers, Tucson, and Dr. and Mrs. Erich Spier, El Paso.

11.—Left to right, Dr. W. J. Thaler, Casper, Wyoming and Dr. Dean R. Shannon, Butler, Pennsylvania.

12.—Left to right, Capt. William Leen, Fort Huachuca, Arizona, Dr. Rhu and Mrs. Leen.

13.—Left to right, Dr. A. A. H. Koepsell, Sacramento, California, and Dr. L. T. Hibbard, Los Angeles, one of the speakers.

14.—Left to right, Paul Desilets, New York, Doho Chemical, Dr. R. V. Seligman, Albuquerque, Dr. J. C. Brougher, Vancouver, Washington, and Dr. E. G. Layton, Seattle.













Second from left is Mrs. Aaron E. Margulis, Santa Fe, president of the New Mexico Medical Society Auxiliary. Dr. E. S. Crossett, El Paso, thoracic surgeon, guest speaker at the meeting, is on the right. With them are Dr. and Mrs. W. J. Hossley, Jr., Deming. Dr. Hossley is president of the Southwestern New Mexico Medical Society, while Mrs. Hossley is president of the society's auxiliary.

Mrs. G. H. Wright of Las Cruces and Dr. Remo Gay, also of Las Cruces.

SOUTHWESTERN NEW MEXICO MEDICAL SOCIETY MEETING

in Deming, N. M., April 4th







1.—Dr. C. C. Cobb, Silver City, N. M., and Dr. Sidney F. Baker, also of Silver City.

2.—Dr. Paul A. Feil, Deming, N. M., (left) and Dr. G. H. Wright, Las Cruces, N. M.

3.—Left to right are Mrs. C. L. Harris, Las Cruces, N. M., Dr. W. B. Cantrell, Truth or Consequences, N. M., and Dr. C. L. Harris, Las Cruces.

4.—Mrs. W. B. Cantrell of Truth or Consequences.

5.—Dr. B. D. Rodgers, Hurley, N. M., (left) and Mrs. Paul Feil of Deming.

6.—Left to right are Dr. L. J. Whitaker, Deming, Dr. L. G. Foster, Silver City, and Dr. John C. Mitchell, Silver City.







Behcet's Disease

By John Dennis Martin, M. D., El Paso

This article was prompted by the appearance in my private practice of a case of Behcet's Disease, which case was reported in the "Registry of Interesting Cases" of the American Medical Association Archives of Opthalmology in August, 1954[1]. The case reported was only the fifth on the North American continent and the first native-born American female with the disease. By far the great majority of such cases have been seen in an area around the Eastern Mediterranean coast and the appearance of so typical a case here in El Paso is startling. These rare conditions have a tendency to turn up in anybody's office at the most unexpected times and, even though the disease may be refractory to all therapy currently available, it is some comfort to be able to make a definite diagnosis.

Opthalmologists might like to credit recognition of the disease entity to B. Adamantiadis[2] an oculist in Athens who states "the disease was first described by me in 1930 as a recurrent iritis with hypopyon, aphthae in the mouth, ulcerations of the genitals, and thrombophlebitis of the fundus or the legs." However, it remained for the Turkish dermatologist, H. Behcet[10, 11, 12] to tie up the oral, genital, and ocular manifestations into what he called a triple-symptom complex that was a distinct clinical entity, and "by publishing cases in several European periodicals make the syndrome known as Behcet's Syndrome" (quotations are from Adamantiadis in [2]).

Caused By Virus

Behcet postulated that the condition was caused by a virus, and in one paper stated that he had found inclusion bodies in the pus from an anterior chamber, but this was not confirmed. The characteristic case typically exhibits a recurrent iritis with hypopyon, aphthae in the mouth, ulcerations of the genitals, and more careful histologic study might yield the thrombophlebitis as a constant finding[3]; superficial phlebitis in the arms and legs shows up in about twenty-five per cent of recorded cases. Some authors, notably Curth[4], include under the diagnosis so-called abortive cases with only two of the three characteristic findings, as iritis with genital lesions, or genital lesions with aphthous ulcers in the mouth; there is some justification for this inasmuch as the triad seldom, if ever, blossoms at once in its full-blown pattern.

One case observed by Whitnall[5] required twenty-one years to develop the full triad of signs and symptoms; but one to four years to exhibit the complete picture seems to be about the average. The condition responds so poorly to treatment that as the unhappy patient shops from one doctor to another in the hope of a cure the physician seen early may not have the opportunity to see the final picture in any one case. In addition to the characteristic symptom complex, there may be complications such as pyoderma, papulo-pustular dermatitis, furunculosis including external otitis with its severe pain, and various rheumatic pains and arthralgias, even to swelling of the joints, especially the ankle. The knees have been involved with a true suppurative effusion which on clearing left no damage to the articular surfaces[3]

Various Complications

With all these various complications, as with the iritis and ulcers of the mouth and genitalia, spontaneous healing with recurrence is the most characteristic facet of the disease. The disease is seldom fatal of itself, but three deaths have been reported, one of these[6] showing involvement of the 3rd and 4th cranial nerves and of the pyramidal tract before death. Another[7] on autopsy showed non-specific round-cell infiltration in the meninges and brain, micro-infarcts in the substantia nigra, perivascular round cell infiltration around the central retinal artery and in the choroid, and round cell infiltrates in the liver and kidneys.

Magni's case[8] showed various CNS manifestations for three years before death. Knapp[9] reported a patient, who, as a complication, suffered for three months from headaches, ataxia, impairment of memory and speech with a positive Romberg and hyperactive patellar reflexes, but with complete disappearance of all these signs and symptoms.

Mostly Males

Four-fifths of the reported cases are in males between the ages of 15 and 45, with half of these in the decade between 15 and 25. Geographically 90 per cent or more of the cases are found around the Eastern shore of the Mediterranean Sea, about 32 cases having been seen at the University of Istanbul[13]. The case reported in this paper is only the fifth to be reported from the North American continent (and incidentally the only female with the fully developed triad, since the female case reported by Dr. Curth had no ocular lesions).

No cross infections among members of a victim's family or other known contacts have been reported, so it does not appear that the disease is contagious or infectious in the usual sense, despite the many open sores that characterize it. While an occasional case has been reported in which useful vision has been preserved, most progress inexorably to blindness. There is some pain from the actual inflammation in the eyes, and often a great deal more from the secondary glaucoma that so frequently complicates the ocular situation.

The skin lesions are non-specific[14] and may resemble erythema nodosum or e. multiforme, or acne, but the term "aphthous" does not to me seem strong enough to describe the deep necrotic punched-out ulcerations which may be as much as one cm.

in diameter. When these involved the pharynx and larynx the edema may be so severe as to require repeated tracheotomy [15]. On the vulva the lesions may perforate clear through the labia majora.

Scrotum Involved

In the male the scrotum is involved more severely than the penis. All of these lesions of skin and mucosa are apt to be exceedingly tender. Each episode of uveitis and ulceration lasts from six to ten days and subsides spontaneously. The interval between episodes gradually lengthens until there are no more attacks, but the individual exacerbations do not seem to become less severe.

Since these bouts may come on from three to twelve or more times a year it is small wonder that most writers comment that these patients show an "extraordinary nervousness and anxiety." The general health remains good. The lesions in the mouth may precede the eye manifestations, or come on years later, and may persist even after the eyes are blind or enucleated.

Extensive Study

Adamantiadis, who has observed six cases, states that the ocular manifestations begin as an iritis, with the hypopyon developing early. Sezer, in probably the most extensive and authoritative study yet made [13] thinks that the ocular lesions actually begin in the optic nerve and retina and that the iritis and hypopyon are later developments, and this view seems to be shared by most observers [16, 17], including myself. The posterior pole and macular region are involved early so that the patient may consult an oculist or optometrist thinking he needs glasses. Even with the opthalmoscope a tendency for the venules to become engorged in a phlebitis has been observed; there is so much exudate in the vitreous that an opportunity to study the fundus details does not often arise.

It is remarkable how this cloudy vitreous sometimes clears between recurrences. The arterioles also are attacked by an endarteritis and a periarteritis, and the result of all this vascular damage is repeated hemorrhages which in organizing may cause retinal detachment. Optic atrophy has been reported frequently and while some earlier writers were inclined to believe this was due to the secondary glaucoma that often supervened, it now appears that the optic nerve is itself attacked in the inflammatory process.

Pathologic Report

The pathologic report on an eye enucleated from my own case is so typical that I will quote it verbatim:

> "Sections of the globe showed iris, lens, remnants, and retina bound into a mass of hemorrhagic and fibrino-purulent exudate adherent to lateral walls of the globe. Marginal scar tissue is abundant and a heavy infiltration of lymphocytes, large mononuclears, and plasma cells is seen. There are no giant cells and no tubercle formation. All layers and structures are involved and there is a moderate perivascular infiltration throughout which extends down the optic nerve. The etiology is not apparant from the sections."
>
> H. F. Heslington, M. D.

Biopsies from skin lesions have shown a similar thrombosis and obliteration of vessels [18, 3, and others].

Excellent Work

The recent excellent work of Sezer seems to establish the causation very definitely as a specific filtrable virus that can cause in rabbits, after as many as thirty passages through infected mouse-brains and chorioallantoic membranes of fertile eggs, a disease which seems in all respects to be the counterpart of Behcet's Disease in humans.

These rabbits show hypopyon, chorioretinitis, loss of hair from their backs, thrombophlebitis even to gangrene, and encephalitis, these various lesions showing up in episodes and clearing up spontaneously as in the human. Sezer had the inspiration to try to obtain the virus from the fresh vitreous of an eye enucleated from a patient suffering from Behcet's Disease and from the subretinal serous exudate aspirated from two other cases of the disease being treated by him at the time.

Despite such a bizarre picture there is some problem in the differential diagnosis [19]. True pemphigus is an invariably fatal skin disease which may involve the eyes and characteristically shows large bullae and tends to affect persons of middle life, especially those of Jewish origin. The variant called ocular pemphigus shows the dramatic "essential shrinkage of the conjunctiva" with vesicle formation and membranes or pseudo-membranes forming in the conjunctiva, symblepharon, and blindness resulting from corneal involvement.

Sharp Patches

Erythema multiforme shows sharply defined erythematous patches which may show a symmetrical distribution, vesicle formation with large crusting ulcers in the mouth, pharynx, genitals, skin, and bronchial tubes, and while recurrent, is usually mild. When involving the eyes with a severe purulent conjunctivitis, as described by Stevens and Johnson [20], it may involve the cornea in extensive and even perforating ulcers; about 25 per cent of these cases are complicated by a severe bronchopneumonia and sometimes death ensues.

Stevens-Johnson's Disease is an acute non-recurrent febrile disorder of children, often seen as a drug reaction, which helps in the differentiation. Lymphogranuloma venereum has ocular and genital components but the conjunctivitis with preauricular, parotid, and submaxillary adenopathy is quite different from the eye involvement in Behcet's Disease.

Despite the ulcerations of the genitals an inguinal lymphadenitis is not a part of the picture in Behcet's Disease. The Frei test would be of value except that it must be noted that in Behcet's Disease a

false-positive reaction to almost any kind of a skin test is easy to obtain since papule and necrotic pustule formation frequently develop from any needle puncture.

Secondary Syphilides

Secondary syphilides might rarely for a short time cause a picture somewhat resembling Behcet's Disease. An uncommon type of herpes zoster with involvement of either the maxillary or mandibular division of the fifth nerve along with the opthalmic branch might give a confusing oculo-oral picture one might mistake for an "abortive" type of the triple-symptom complex, but the true state should soon be recognized.

At the present time no treatment is of any avail. save efforts directed toward the relief of pain and prevention of secondary glaucoma. Enthusiasm for any therapeutic agent can be high, for it is the nature of each individual episode to clear up in five or ten days regardless of what therapy is used or whether any therapy is used.

Arsenicals, Bismuth, gold preparations, bacterial antigens, anticoagulants, iodides, smallpox vaccine, hormones male and female, whole blood transfusions, vitamins of all kinds, nicotinic acid, sulfonamides, the various antibiotics, antihistaminics, deep and superficial X-ray therapy, allergic desensitizations, removal of foci of infection, and cortisone and ACTH in adequate dosage have failed. An exacerbation was noted in one patient while receiving ACTH.

Real Challenge

To spark the morale of such a sorely beset patient is a real challenge to the physician and that phase of management cannot be overemphasized. It would be well to direct such a patient toward vocational rehabilitation early in the course of the disease.

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Book Reviews

LEVINSON, Samuel A., MD, PhD, and McFATE, Robert P., ChE, PhD. CLINICAL LABORATORY DIAGNOSIS, 5th edition, Lea & Febiger, Philadelphia, 1956. $12.50

This new edition of a long accepted work is one of the very best single volumes for use of general practitioners, specialists, and students alike. It is especially well arranged for comparison of pathologic and normal findings in all clinical laboratory fields. A review of clinical symptoms of various entities and normal physiology is one of its best features.

The methods described are those in use in the University of Illinois Educational Hospitals Laboratories and in the Chicago Board of Health Laboratories.

The procedures are up to date, well and simply presented.

A paragraph on interpretation of findings is very helpful.

This book should be useful to anyone who practices medicine, be he GP or specialist.

D. von Briesen, M. D., El Paso

CLINICAL BACTERIOLOGY. By E. Joan Stokes. 288 pp. Edward Arnold, Ltd., London, 1955. $8.00.

This is a well organized, well-written manual of extreme practical value. The procedure for collection of clinical material as well as culture and identification of organisms is clearly outlined, including directions for carrying out antibiotic assays and immunologic tests. Worthy of special attention is the chapter on the practical aspects of hospital epidemiology.

PROLONGED AND PERPLEXING FEVERS. By Chester S. Keefer, M. D., and Samuel E. Leard, M. D. 248 pp. Little, Brown and Company, Boston, 1955.

The authors have presented a clarification of the differential diagnosis of fevers of longer than two weeks' duration. Part One is devoted to the practical considerations of the physiology of fever, and the remainder of the book discusses infections and non-infectious fevers, stressing the most common causes and their atypical manifestations. There are numerous illustrative case histories. The carefully organized manner of presentation makes this book valuable both as a quick reference and as a contribution deserving thorough study.

CORTISONE

Cortisone In Hypertensive Vascular Disease
Perera, G. A., et al., J. Clin. Invest. 29:739, 1950

Cortisone influenced hypertension only slightly. Insomnia, increased appetite, loss of scalp hair, menstrual changes, and delayed healing of a superficial pyogenic abscess were observed during cortisone therapy.

Clinical Clippings, October, 1950.

Insulin Additives: Glucagon, Nitrogenous Substances, Metallic Elements, and Specific Pharmacodynamic Agents

By Theodore M. Feinblatt, M. D., and Edgar A. Ferguson, Jr., Chemist, Brooklyn, N. Y.

Part I

Substances Which Affect Insulin Response

Since the beginning of insulin therapy great interest has been manifest in substances which delay or modify the action of insulin. These substances may be classified in accordance with their constitution as follows:

1. Glucagon[3] - a substance found in pancreatic extracts of insulin commercially available in United States, which tends to raise the blood sugar.

2. Nitrogenous substances

a. Protamine[7] which causes a long delay in insulin action with extremely small absorption during the period of delay. (See Fig. 1.)

b. Globulin which causes a small delay in absorption and allows the insulin to act during the period of delay. (See Fig. 1.)

c. Hexamethylene Tetramine[8] which causes an intermediate delay and allows insulin absorption during this period of delay (See Fig. 1.)

3. Metallic Elements

a. Aluminum potassium sulfate which causes considerable delay in the action of insulin[29] (See Fig. 1.)

b. Zinc in the form of zinc insulin crystals (old) which causes a small delay in the action of insulin[9] (See Fig. 1.)

c. Zinc in modified (Lente*) form (new) which causes an intermediate delay in the action of insulin and allows absorption during the period of delay.

4. Specific pharmacodynamic agents:

a. Histamine, subject of this report, which increases the speed of absorption of insulin.

b. Ergot derivatives (equal mixture of dihydroergocornine, dihydroergocristine, and dihydroergokryptine**),[10] subject of this report, which did not alter the absorption rate of insulin commercially available in the United States in rabbits or human subjects.[29]

c. Adrenochrome (as the sodium salicylate salt of the semicarbazone of adrenochrome***), subject of this report, which did not affect the rate of absorption of insulin commercially available in the United States, in human[29] or animal subjects.

Substances Which Affect Insulin Solubility

Most of the substances which affect the rate of absorption of insulin work by altering the isoelectric point (pH at which insulin is least soluble) or by rendering the insulin more insoluble at the pH of the tissues. Substances affecting insulin absorption

* Supplied for test purposes as *Lente Iletin* by Eli Lilly and Company, Indianapolis, Ind., U. S. A.

** Supplied for test purposes as *Hydergine* by Sandoz Pharmaceuticals, Division of Sandoz Chemical Works, Inc., New York, N. Y.

*** Supplied for test purposes as *Adrenosem* by The S. E. Massengill Co., Bristol, Tennessee

Timed Response Curves of Various Forms of Insulin

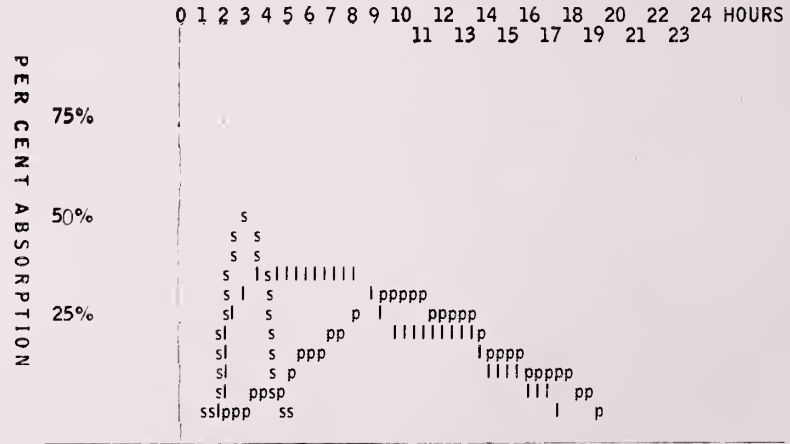


Figure 1.

ssssss. Standard Insulin (American)
llllll Lente Insulin
pppppp Protamine Insulin

by this mechanism are protamine, globulin, hexamethylanine tetramine, aluminum potassium sulfate, and zinc. These are summarized in Fig. 1.

Standard

Standard insulin (designated "s" in the graph) dissipates its action within four to seven hours reaching a peak of activity at approximately four hours.

Protamine

Protamine insulin (designated "p" in the graph) represents extreme delay with little activity during the first eight hours, reaching a peak at approximately twelve hours, and slowly reducing its action during the last twelve hours.

Lente

Lente insulin (designated "l" in the graph) represents an intermediate between standard and protamine acting almost as quickly as standard insulin and maintaining its action almost as long as protamine.

Globulin

Globulin is similar to standard insulin except for some intermediate delay and can be described by the first portion of the Lente curve, but the prolongation of action is missing.

Hexamethylene Tetramine

Hexamethylene tetramine insulin may also be described by the first portion of the Lente curve but the prolongation of action is missing.

Aluminum Potassium Sulfate

Aluminum potassium sulfate insulin in certain forms has the prolongation of effect found in protamine but is uncertain in its effect.

Zinc Insulin Crystals (Old)

Zinc insulin crystals (old) solution has almost exactly the same curve as standard insulin but is very slightly delayed.

NPH Insulin

NPH insulin is very similar to the Lente curve but is more uncertain in its action.

Note: The curves have been adapted from, "Report of Comparative Blood Sugars in Diabetes with Standard Insulin and with New Improved Insulin," by Feinblatt and Ferguson, reference No. 9.; "Control of Diabetes" by Murray and Wilson, reference No. 7.; "Hexamine Insulin" by Feinblatt, Ferguson, and Alpert, reference No. 8.; and reference No. 29.

Substances Which Do Not Affect Insulin Solubility

Some substances which may affect the rate of insulin absorption by specific pharmacodynamic effect are glucagon, histamine, ergot, and adrenochrome. These substances form the subject of this report and their effect on the rate of absorption of insulin or lack of effect on this rate are of extreme clinical importance.

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29. Report to be published by the present authors.

(To Be Continued)

Chemical and Biological Studies on Sulfur-Containing Polysaccharides. *Mordecai E. Berkowitz.* At pH values as high as 8.6, human plasma proteins have been found to interact in a characteristic fashion with certain sulfated polysaccharides.[1] In order to understand the basic chemical and biological behavior of sulfated polysaccharides more thoroughly, the following study was carried out.

The *in vitro* anticoagulant activity of sulfated polysaccharides was determined to be from 1 to 47 per cent of that of heparin, with the average anticoagulant activity being 26.4 per cent. There is no correlation between the degree of *in vitro* anticoagulant activity of sulfated polysaccharides and their chemical composition and capacity to precipitate human beta-globulin at pH 8.6. By turbidimetric analysis preceded by acid hydrolysis it was found that the various sulfated polysaccharides studied contain from 4 to 21 per cent sulfur. Those sulfated polysaccharides containing glucose as the only constituent were noted to give a turbidity in the presence of barium acetate at a pH of 1. These same sulfated polyglucosans also precipitate human beta-globulin at pH of 8.6, signifying a definite correlation between their chemical structure and their capacity to yield insoluble barium salts at pH 1 and to precipitate human beta-globulin at pH 8.6. In the presence of versene at pH values from 5.7 to 7.1, the barium salt of inorganic sulfate was found to be less soluble than the barium salts of sulfated polysaccharides.

United States Public Health Service Co-operative Investigation of Intra-Microbial Therapy of Tuberculosis Meningitis Prophylaxis Protocol *

By Jack C. Postlewaite, M. D., El Paso

Introduction:

In spite of the rapid reduction in mortality rate from tuberculosis in El Paso City and County in the past ten years there is still a notable increase in the morbidity of tuberculosis and in the mortality of tuberculosis meningitis. For example: In 1945 there were 255 cases of tuberculosis admitted to El Paso Tuberculosis Sanitorium of which 88 were minimal, 87 moderately advanced, 68 far advanced, with 12 extra pulmonary cases present. The deaths were 137, or approximately 130 per 100,000 population. In 1953 there were 257 cases admitted to the hospital with 78 minimal, 106 moderately advanced and 73 far advanced and no extra pulmonary disease reported. 36 deaths were recorded or 24.8 per 100,000 population. This improved picture, however, was not paralleled by the death rate or the morbidity rate of tuberculous meningitis. There were 8 such cases reported in 1954, with eight deaths, a 100 per cent mortality. This has been the average throughout the period of statistical study in the past ten years.

Recent Reports

Due to recent reports and observations on the isonized group of drugs in the treatment of tuberculosis it has been observed that no case of tuberculosis meningitis occurred in children on isonized therapy. This observation has not been generally held by all thesiologists and is therefore the basis of the study to be outlined in this report. Dr. Edith Lincoln of Bellvue Hospital has felt very strongly that there was no use to treat the primary lesion of childhood tuberculosis with INH because of lack of response. However, the high incidence of tuberculosis meningitis in this group of children ages through 4 has stimulated the prophylactic meningitis study.

Skin Reactors

The incidence of positive skin reactors to PPD 0.0001 mg. is very high in border areas such as El Paso (approximately 10 per cent), and has been reported as high as 65 per cent in the past 25 years. The slum areas examined in the Phillipines and in Cuba have revealed incidence as high as 85 per cent positive skin test. The general average for this country at the present time is 3.7 per cent in non-indigent areas and 10 per cent in slum areas. In Savannah, Georgia, 1020 children studied by patch tests revealed an incidence of 4 per cent plus. None were found in the age group under one year of age; 1.8 per cent from one to 2 years of age; 8 per cent in the 2 to 3 years of age; 3.5 per cent in the 3 to 4 years of age; 10 per cent — 4 to 5 years of age; and 7 per cent in the 5 to 6 years of age. Approximately 88 per cent of the children in contact families are positive by the fifth birthday. Based upon this high incidence of conversion in children and with a risk somewhere between 3 and 20 per cent — estimated — of meningitis complication, it moved the Health Department in El Paso to undertake this study of meningitis prophylaxis.

Co-operative Investigation

The following co-operative investigation was created to determine the effectiveness of isonized in preventing meningitis and other tuberculous complications in children with primary tuberculosis. Under the direction of Dr. Frank W. Mount, Washington, D. C., the protocol outline for the meningitis prophylaxis study was forwarded to participating health departments. As of June 20, 1955, participating investigators were given the following outline and criteria for the selection of cases for the study. 1. Children under 3 years of age with a reaction of at least ½ mm. of induration of 1-10,000 mg. PPD, with or without a lesion visible by x-ray of the chest. 2. Children in this age group with x-ray evidence of hilar or parenchymal calcification are acceptable and there is no limit to the known duration of infection. 3. Children over 3 years of age with evidence of pulmonary or hilar calcification from any cause who also have x-ray evidence of an active primary tuberculosis lesion, either hilar, parenchymal or both. 4. Children who previously were known to have no reaction to intra-dermal PPD but, who, within six months from that date, developed a reaction to 1-10,000 mg. PPD. These children need not have x-ray evidence of primary tuberculosis. Within these four classifications of children a plan of random selection for ½ of these subjects to receive isonized, the other half to receive Placebo medication, was devised. These children are screened at the local clinical level each month and will receive repeat medications under a pre-numbered bottle system originating in the Health Office at Washington, D. C.

Identical Tablets

The tablets of Isonized and Placebo are identical in both taste and appearance. Both tablets are flavored with peppermint and are scored and of a 50 mg. size; although, the Isonized tablets contain only 25 mg. of drug. The daily dosage of drug will be from 4 to 6 mg. per kilogram of body weight. Dosages will be adjusted during the treatment period as changes in the body weight are noted. The duration of treatment of each patient will be approximately twelve months at which time it is hoped that no other anti-tuberculosis therapy will be necessary. A post-treatment observation of twelve additional months will be necessary to complete the observation.

* Delivered before the Annual Meeting of the U. S.-Mexico border Public Health Association in Mexico City.

A clinic visit every three months will be necessary for follow-up, whereas, we in the El Paso Clinic are following each case at monthly intervals with a 72 mm. chest x-ray, weight, temperature, historical and physical examination.

All cases of pre-study report are followed up by history, physical examination, x-ray of chest — posterior, anterior and lateral. The latter is repeated on the 3rd, 6th, 12th and 24th month following the institution of therapy. The lateral x-ray of the chest is required only on the pre-study 12th and 24th month.

Therapy Discontinued

Under certain circumstances therapy under the prophylactic study will have to be discontinued. Instances of drug toxicity or a drug idiosincrasy are recorded and it is anticipated that only temporary discontinuation of therapy will be necessary under these circumstances. Occasionally the toxic situation will require complete discontinuation of medication for the sake of safety of the patients. It is also anticipated that intercurrent illnesses will occur and require therapy, non-tuberculous in type, and should be of no consequence to this assignment. Surgery during the treatment period, if requiring anti-tuberculosis therapy of less than three weeks, would not alter the circumstances of the protocol study. The central office of the health department will furnish the items of medication, both the Isonized and the Placebo drug, the skin test antigen which will be sent at regular intervals, x-ray films and record forms. The skin test antigen — depending upon the areas served — would include Histoplasma, Coccidiodin and Blastomycin. It is anticipated that endemic areas are fairly well known and these will be included as indicated.

Treatment Continued

Each child in the study will receive the preparation daily and will continue the treatment for at least one year. By random selection half the children will receive Isonized and the other half Placebo. There will be no break in this continued service unless the child should develop a complication or deteriorate with regard to the tuberculosis during the study. It is here that the investigator will discontinue the protocol therapy and request information from the central health office as to what therapy has been given to that point in the child's case. It is then at the physician's direction that therapy should be placed on specific basis with regard to the complicated case of tuberculosis. The exclusions of certain patients as ineligible should be considered under the following conditions:

1. Anti-tuberculosis chemotherapy required by the extent of the pulmonary lesions, severity of symptoms, or complications thereof.
2. The duration of the disease of tuberculosis known to be present for more than six months duration.
3. More than thirty days of anti-tuberculosis therapy previously recorded.

Indigent Patients

1. It is anticipated that the source of these patients will probably be in poor, semi-indigent, or slum areas of large cities; 2. Indian control stations, and in conjunction with BCG investigations; 3. well baby clinics; 4. contact clinics, and 5. large pediatric centers — both outpatient and hospital. At the present time there have been 525 cases entered into this protocol. Nine cases have developed complications and were removed from the program. None of the nine cases, however, developed meningitis. This study was started in El Paso on January 26, 1955, both in the contact clinic and in the well baby clinic. The Volmer patch test was employed in the well baby clinic and 416 tests applied in this first six months of the study — (negative, 398 — positive, 18 — percentage 4.5 positive reactors). In the contact clinic the PPD test, 1-10,000 mg. was done in 97 infants — (negative, 47 and positive 50, with 52½ per cent positive reactors). The sources of these patients have been the Well Child Conference and The Tuberculosis Control Clinic in which self referrals, contact old cases, and contact new cases are taken. The source of the cases now under observation (50 in all) are 40 per cent self referrals and 60 per cent contact cases.

Majority in Children

One needs only to be reminded that the majority of meningitis cases occur in children under the age of 4. In fact, less than one out of 1,000 cases of pulmonary tuberculosis complicate in the age group 4 and over. Thus, 49.6 per cent of tuberculosis meningitis occurs in children one year and under; 7.7 per cent are children one to 4 years of age, 0.1 per cent are 4 to 7 years of age, and the remainder over the age of 7. (Incidence of Tuberculosis Meningitis in England in 1953). We parallel these figures very much in this country. This study was given great impetus by experimental work in the prevention of tuberculosis carried out by Carroll E. Palmer and Shirley H. Faraby, reported in May of 1955. The demonstrated effectiveness of Isonized in combating disease of tuberculosis has led many workers to the belief that the drug would be more effective if used prophylactically; and Isonized was given to experimental animals to which challenging doses of tuberculosis were injected before, during and after the therapeutic periods. This work with excellent control study revealed several important considerations worth summary. 88 per cent of experimental animals survived a ten weeks challenge of active tuberculosis if on 5/100 mg. per liter or more of Isonized. Those on 1/100 mg. per liter of Isonized concentration had a survival of less than 40 per cent at ten weeks. Re-challenge of surviving animals under therapy revealed approximately 80 per cent survival in 25 weeks. However, if drug dosages of less than 5/100 mg. per mll. or less were used the survival rate was

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Clinical Note on Diagnosis of Abnormal Liver Function Associated With Endocrine Dysfunctions

By Joseph B. Raddin, M. D., Phoenix

Since the liver metabolizes the steroid hormones, namely estradiol, progestin, testosterone and the adrenal cortex hormones, therapy of male and female sex endocrine gland dysfunctions is notoriously futile in the presence of markedly abnormal liver function.

DIAGNOSIS

Several tests easily and readily performed in the office accurately diagnose abnormal liver function for practical clinical purposes.

A. Abdominal palpation.

1. Palpable liver.

A palpable liver is an enlarged liver and it follows with few exceptions that there must be some disturbance of liver function.

2. Tender liver or gall-bladder.

A liver or gall-bladder which is tender or painful to palpation is diseased.

3. Tender colon.

Any portion of the large intestine, particularly the cecum, which is tender to palpation may harbor Endameba histolytica. Amebic cilitis is common in the southwest and is regularly accompanied by amebic hepatitis. Proctoscopic and sigmoidoscopic examination regularly confirms the suspicion of amebic colitis.

A diagnosis of appendicitis or cholecystitis should NOT be entertained nor operation performed until the possibility of amebic colitis, amebic hepatitis and amebiasis has been eliminated. When relief of symptoms follows specific amebicidal therapy, confirmation of the tenative diagnosis of amebic infection is highly probable.

B. Decholin taste time.

Ten cc. of 20 per cent Decholin solution is used for this test.

With the patient recumbent, the needle is inserted into an arm vein of good size. A slow but steady injection of the Decholin is made intravenously until the patient notes the distinctive but disagreeable bile taste. The quicker the taste is noted, the more normal is liver function — a matter of five to ten seconds. When the injection of two or three cc. of Decholin induces nausea liver function is quite normal. When more than five cc. can be administered fairly rapidly without causing much taste and no nausea, liver function is markedly abnormal.

C. Laboratory tests.

Conventional liver function tests have a place in the diagnosis and are valuable to determine response to therapy when abnormal values have been obtained. However, a battery of such tests is expensive, few are ever abnormal in the usual ambulatory office patient, and the information obtained is therefore not of much more practical clinical value for diagnosis and therapy than that obtained by the Decholin test and physical examination.

Discussion

Many women with female sex endocrine gland hormone dysfunctions will respond to adequate and indicated hormone therapy when abnormal liver function is present. Several simple but practical office diagnostic procedures are described. Therapy to improve liver function must precede or be concurrent with hormone therapy to insure good response. The possibility of amebic hepatitis and amebiasis should always be considered, especially in the Southwest.

The same statements hold for male sex endocrine gland dysfunctions.

Dental Medicine Case History Service

The Institute continues to offer Case Histories from the broad field of Dental Medicine for the year 1955-56. These will include original 35 mm. Kodachrome slides of the oral condition, pertinent laboratory findings, medical background, roentgenograms, histologic slides, photomicrographs, diagnostic criteria and whatever else may be indicated in each individual case. A loose leaf binder and matching Kodachrome slide box will be furnished each participant. The fiscal year of the Institute begins October 1st.

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For further information address all communications to the Secretary, Mrs. C. Novembri, 2240 Channing Way, Berkeley 4, California.

The Advantages of Braces in Orthopaedic Surgery

By W. Compere Basom, M. D., El Paso

In the last decade there has been much said about the avoidance of braces and an attitude has developed that braces are not essential.

Braces are highly effective for certain conditions and offer a method at times far better than any other in the prevention of contractures. The patient is also enabled to get about with better function and with less discomfort.

Criticism is rarely leveled at braces for the spine. Upper extremity braces also usually get by without undue commentary. However, there has been a noticeable antagonism to long leg braces and this brief article has merely been arranged in effort to offset that particular attitude.

There are many conditions of the lower extremity in which an appropriate brace is highly effective.

Encouragement Needed

The patient needs the encouragement of all those concerned; that of the orthopaedist, the neurologist, neurological surgeon, the physical therapy technician and the nurses in order to gain the proper attitude with which to use the brace. Those patients who have a pediatrician or a general doctor taking active part in the care of their case usually have had excellent encouragement and cooperation.

A patient with a drop foot condition can walk normally with a proper brace. The brace will hold the foot up. The brace can be applied without the pain of surgery and can be effectively made. It will prevent an equinus deformity.

In certain neurological conditions with marked weakness of the muscles of the lower extremity, a long leg brace is most essential. It not only provides for better locomotion but also it protects the extremity against injury. If the muscles do not function, then the strain of the function is taken up by the ligaments and joint capsule. These are easily strained and actually injured with normal activity at times.

May Prevent Fall

A brace may prevent a fall and consequent injury.

The patient should be told by all those connected with the case that the brace looks good; that it is a very good functional appliance; that it will protect them against injury. They should be encouraged to wear the brace because at first they feel self-conscious with it. They also cannot walk as well at first with the brace even if it is properly designed, ordered and fitted. With a little time and a little encouragement they learn to use this appliance well and then they can obtain marked protection and improvement from it.

It is hoped that all of those who have any connection whatsoever with braces will realize their functional capacity in relation to the patient and adopt an encouraging and optimistic attitude towards them. This will aid the orthopaedist in carrying out the proper management for his patients.

ACTH — CORTISONE

Clinical Studies With ACTH And Cortisone In Renal Disease

Thorn, G. W., et al., Arch. Int. Med. 86:319, 1950

Limited observations suggest that neither ACTH nor cortisone favorably influence the course of acute, subacute, and chronic nephritis. However, ACTH therapy apparently induces diuresis in patients with the nephrotic syndrome, an effect which may be directly related to reduction in tissue edema.

Harvard Med. School & Peter Bent Brigham Hosp.

Clinical Clippings, December, 1950.

ANESTHESIA

Hyaluronidase In Rhinoplasty

Cottle, M. H., et al., Arch. Otolaryngol. 52:269, 1950

Use of hyaluronidase-procaine-epinephrine hydrochloride solution is decidedly advantageous in rhinoplastic procedures. There is prompt subsidence of tissue distortion and more adequate anesthesia. The onset of anesthesia is very rapid, thus saving operating time.

Cook County Hosp. & Chicago Med. School

Clinical Clippings, December, 1950.

ANTIBIOTICS — SYNERGISM

Studies On The Synergism Between Bacitracin And Penicillin: Correlation Of *In Vivo* And *In Vitro* Results

Johnson, B. A. & Meleney, F. L., Ann. N. Y. Acad. Sci. 53:42, 1950

A synergistic action was observed between bacitracin and Penicillin when tested against 24 strains of *Staph. aureus*. It is suggested that combined therapy may produce excellent results in patients who fail to respond to penicillin alone.

Clinical Clippings, December, 1950.

United States Public . . . .

(Continued from page 301)

less than 40 per cent in 26 weeks. Several interesting problems are posed by this study which can only be settled by the considerations of the clinical protocol work. It will be interesting to compare these figures with present BCG work going on in the Indian service. These factors will be reported at six month conferences and released to the participating clinics. We can only hope that a means of prophylaxis and prevention of fatal tuberculosis has been uncovered.

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

March 15, 1956
Case No. 555

FREDERICK P. BORNSTEIN, M. D., EDITOR

PRESENTATION OF CASE BY DR. JACK C. POSTLEWAITE AND DR. ANTONIO DOW

History:

Dr. Nathan M. Kleban

A 73-year-old Latin-American widow was admitted to El Paso General Hospital for the first time on November 4, 1955, because of rapidly increasing abdominal swelling without pain for one week. Loss of appetite occurred and vomiting began two days before admission. On that day frequent soft small stools were passed. "Heartburn" was experienced. No blood issued from any orifice.

Past and family history and system review were not contributory. Menopause was said to have been experienced at age 45.

Physical Examination:

Temperature 101.2, pulse 112, respirations 22, blood pressure 170/190, weight 145 pounds. The patient appeared alert, was in slight respiratory and general distress. There was poor tissue turgor. Conjunctives were pale. Arcus senilis was present. There were no teeth. Rales were heard at the right base. The abdomen was protuberant with a fluid wave and shifting dullness detected. One examiner described the percussion note as tympanitic, another as dull. Pelvic examination was said to be negative although there was a yellow vaginal discharge. Pedal edema was present. Palmar erythema was described.

Hospital Course:

The patient vomited and had loose yellow, brown and green stools intermittently throughout her hospital stay. Medical and surgical consultants recommended paracentesis. Seven liters of turbid, light brownish green fluid were removed but inadvertently discarded. Blood pressure dropped from 190/100 to 100/60. Abdominal pain was a complaint during the night. Blood pressure rose to 120/60 the next morning. Paracentesis was repeated.

Weight dropped to 126 pounds. 250 cc. of yellow fluid was removed during the third paracentesis on the seventh day. That afternoon blood pressure was 160/80, dropped to 130/60 during the night when the patient seemed confused and complained of headache. The temperature, which had ranged from 99° — 100° jumped to 104° for several days, then dropped back to 99° where it remained.

Eighth Day

On the eighth day there was urinary incontinence. Lethargy, dehydration, abdominal tenderness and poor food intake were noted. Blood pressure dropped to 74/56. Cedilanid was given for an arrhythmia. A tarry stool was reported by the nurse but not verified the next morning on the rectal exam. With electrolyte solutions and cortisone the patient improved some, blood pressure rose to 140/50. Somnolence decreased. Urine output was 1750 cc. on the day before death.

During the last few days there was epigastric dullness. Also noted were presacral edema, abdominal distension, tenderness and warmth over the vein in the right leg where an I-V cut-down had been done. On the day of death patient appeared alert and cooperative. In the morning she vomited but later ate a small amount of lunch. Thirty minutes after 0.4 mgm. cedilanid was given I-V the patient went into severe respiratory distress and died. 0.4 mg. cedilanid had been given 4 hours before. The last dose was 4 days before. Blood pressure was 160/70 on the day of death.

Laboratory Studies:

Nov. 5: RBC 3.77; Hb 10.6 gms; WBC 7800; Segs 77; Stabs 6; lymphs 9, Monos 6, eos 2. Urinalysis: Straw, clear, acid, 1.015, albumin 1+, sugar negative, WBC 3-4, RBC 1-3, few finely granular casts. Blood urea nitrogen 30 gm%; total protein 6.5 gm%; chlorides 90 mEq/L; CO_2 capacity 16 mEq/L.

Nov. 7: Ascitic fluid: Specific gravity 1.014; proteins 1.4 gm%; loaded with RBC, culture requested but not reported. Serum proteins: albumin 2.29 gm%; globulin 3.59%; Van den Bergh: direct 0, indirect 0.7; prothrombin time 16 seconds 55% of normal. CO_2 capacity 33 mEq/L; chlorides 78 mEq/L. Hematocrit 40%; corrected ESR 45 mm.

Nov. 8: CO_2 capacity 29 mEq/L; chlorides 108 mEq/L; Potassium 8.3 mEq/L; Sodium 142 mEq/L.

Nov. 9: CO_2 capacity 18 mEq/L; chlorides 80 mEq/L; Cephalin cholesterol flocculation 1+ in 24 hours, 3+ in 48 hours, prothrombin time 100% of control; acid

phosphates 0; acid phosphatase 2.8 Bodansky units; serum albumin 2.77 mg%; serum globulin 2.37 gm%; Van den Bergh, direct .3, indirect .6; potassium 3.3 mEq/L; Sodium 130 mEq/L. Kline exclusive negative.

Nov. 11: RBC 3.38; Hb 9.9; WBC 8100; Segs 81, stabs 5, lymphs 13, eos 1.: moderate hypochromia and anisocytosis.

Nov. 12: Cephalin flocculation: negative 24 hours, 1+ 48 hours, CO_2 capacity 18 mEq/L; chlorides 71 mEq/L; CO_2 capacity 20 mEq/L; chlorides 84 mEq/L; potassium 8.3 mEq/L; Sodium 142 mEq/L.

Nov. 16: Urinalysis: straw, cloudy, acid, WBC 3-4, RBC 10-15, Hematocrit 35%; Hb 8.1 gms; WBC 11,900; Segs 86, stabs 5, lymphs 9. CO_2 capacity 13 mEq/L; chlorides 75 mEq/L; Potassium 7.7 mEq/L; Sodium 130 mEq/L; stool culture; coliforms and staph organisms

Nov. 17: CO_2 capacity 11 mEq/L; chlorides 71 mEq/L; Blood urea nitrogen 53.5 mg%; serum albumin 2.27 gm%, globulin 1.97 gm%.

X-Ray Reports:

Nov. 5: Radiographic examination of the chest reveals bilateral pulmonary intensification consistent with congestive failure. There is some elevation of the diaphragm. The heart and mediastinal structures reveal left ventricular prominence with an accompanying elongated, tortuous arteriosclerotic aorta. The trachea is slightly displaced to the right by the elongated aorta.

Nov. 5: Re-examination of the chest: No significant change. There are changes consistent with a pulmonary congestion secondary to cardiac decompensation with changes in both bases consistent with pulmonary infarct. There may also be an associated atelectasis of the right lower lobe. The cardiac shadow cannot be well visualized.

Survey films of the abdomen in upright examination reveals an all-over uniform density of the abdomen consistent with an ascites. Obliterating the usual landmarks there is a moderate amount of gas in the large and small bowel. No definite evidence of an intestinal obstruction. There is no evidence of free air under the diaphragm on either side.

Nov. 10: Upper G.I. Series: No evidence of hiatus hernia. Peristalsis was sluggish but effective. The duodenal bulb filled and emptied regularly. There was no widening of the duodenal loop. There was no significant displacement of the barium filled loops of bowel.

Nov. 16: Chest film: Findings consistent with left pleural effusion. The remainder of the chest reveals no significant change.

Tissue Report:

The specimen consists of bronchial smears for cytology. Cytological examination of sediment is slightly suspicious of tumor cells.

Electrocardiogram:

Nov. 15: Sinus tachycardia with occasional sinus arrest. Low voltage in limb leads. ST depressed in left V leads.

X-Ray Discussion:

Dr. Vincent M. Ravel:

Let us begin more or less in the order in which these examinations were performed. This first one was the film on admission and it shows the elevated diaphragm and the intensified markings and the compression phenomena in the patient which you see with congestive failure, the arteriosclerotic aorta, the slight displacement of the trachea.

The second examination, the survey films of the abdomen, shows a marked amount of generalized fluid in the peritoneal cavity with obscuration of the usual landmarks. Now, this is the sort of thing that you see in a peritonitis — chronic peritonitis, one that would be consistent with the febrile course that this patient exhibited while in the hospital. A repeat chest examination was performed and it showed no really significant change from the original elevated diaphragm with the elongation of the aorta with arteriosclerosis.

Survey Film

The survey film that we did during the upper G.I. series shows that there really was no significant displacement of the G.I. tract. A considerable amount of fluid had been removed prior to this examination, although there is still some haziness in the pelvis. The stomach appeared normal and the duodenum was normal.

The final film that we have is a portable examination of the chest, showing the left hemothorax, to show this diffuse haziness consistent with a pleural effusion.

Differential Diagnosis:

Dr. Postlewaite:

I will try to break the case down into a teaching problem, because we're not going to get the diagnosis, I'm sure. I'd like to outline the problem as to how we'd approach this patient at bedside.

It seems to me the outstanding problem is one of ascites. Painless ascites. I'll try to cover at least some of the differential diagnoses of painless ascites

and Dr. Dow will fill in an additional diagnosis of apoplectic abdomen or painful ascites, knowing that this lady is in the age group where pain occasionally is absent with rather serious diseases. Congenital disease killing a 73-year-old female would be most unusual, but if we omitted it, the anatomist would be bound to find a retention cyst in one kidney, and we should not have overlooked it.

Inflammatory diseases of the abdomen causing ascites are numerous. The gall bladder perhaps is outstanding in the female, stones being the usual precursor, stones not appearing in the gall bladder until some inflammatory disease has precipitated it many years before. Then a stone perforates, or a gall bladder twists, or a secondary infection occurs, or a hepato-cholangitis precipitates the ascites.

Inflammatory Disease

Another inflammatory disease is pancreatitis, although I'm not sure we should put it in the inflammatory group. And so, at the differential diagnosis, according to organs, we have to consider liver, kidney, gall bladder and pancreas. The following organisms have to be considered in the etiology: tuberculosis is not uncommon and will give ascites that is rather painless. The fungus diseases are certainly to be considered. Pneumococcus is one that in years gone by plagued many of the men treating pneumonia without the antibiotics.

Presumably, some of the pancreatitis problems are virus in origin.

Two groups of diseases that are hard to differentiate are the degenerative diseases and the metabolic diseases. Metabolic diseases can be any problem of protein metabolism, sugar or otherwise. The degenerative diseases presumably are ageing, and I don't know that you can differentiate them unless we subclassify them and make the program too extensive. So, let's put them together.

The common causes of ascites:

Cardiac — and she's certainly got a good set-up for this, including the possibility of a so-called cardiac cirrhosis. They do get ascites and they can conform to the picture we see.

Renal — She has casts in the urine. There are red cells. There's albumin. She apparently had a low specific gravity and she had an increased urinary output throughout her hospital course.

Hepatic — Interestingly enough, most of the liver function tests are normal. But this doesn't mitigate against the possibility of neoplastic disease, obstructive intrahepatic disease, and against the possibility of inflammatory disease of the hepatocholiangitis group.

Neoplastic — Now the neoplastic diseases have been our plague since Dr. Bornstein has gotten here. I have never seen so many cancers. This is obviously carcinoma and it very likely is the cause of the whole problem.

Now, there's no reason why we aren't dealing with a hepatoma, although she's outlived the hepatoma group. They usually try to die around the fifties.

Carcinoma gall bladder — We have no information for consideration of the gall bladder one way or the other. She wasn't jaundiced, but that's not unusual.

Carcinoma of the pancreas — It can be in the tail of the pancreas and they vary in their symptoms. We fall all over ourselves making the diagnosis when they turn yellow, and they are violently ill and they live a few months at most. In a review of the carcinoma of the pancreas, almost all tests were done by a group in Michigan on a case and two of the outstanding professors reviewed the case and said, "There's no question that this pain, and the other syndrome going along mean neurosis." They were only to be plagued when the doctor returned the patient a few weeks later with jaundice and it became an obvious carcinoma of the pancreas.

Benign tumors I don't think are worth consideration here.

Now, this is the point at which I would call for surgical consultation.

Dr. Dow:

I was looking for something surgical in this case. There must be something surgical or Dr. Bornstein wouldn't have had me up here. But there's not much to go on in this case; so the best thing we can do is pick out the positive findings and try to build a case from them. As far as I'm concerned, there are four things that I can attempt to build a case on: The first one is ascites. The second one is that of the yellow vaginal discharge. The third is that of the phlebitis in the right leg. And, finally, the numerous soft stools.

Ascites

Now, before I discuss ascites, I thought perhaps we'd briefly review some of the features of ascites. As you know, ascites is a symptom and not a disease. It may be due to local or general causes, as was brought out by Dr. Postlewaite. Most of the time, however, as we see it clinically, it is due to heart disease, kidney disease, neoplasm in the abdomen, cirrhosis of the liver and tuberculous peritonitis. An additional cause may be any interference with the outflow tract of the liver as is seen in Chiari's Syndrome, or obstruction to the inferior vena cava proximal to the entrance of the hepatic veins.

Ascitic fluid is usually clear and has a yellowish or greenish tinge. It is alkaline, has a specific gravity of 1008 to 1015. The albumin content varies from 2½ to 4½ per cent. When it is opalescent, or milk-like, it is the result of the presence of chyle, which may be due to the obstruction of the cysterna chyli, usually from malignancy. You'll recall here, in this particular case, the ascitic fluid was described as a light brownish green fluid. That is a little abnormal, in that brownish would suggest the presence of something else.

Red Blood Cells

One examination done on the ascitic fluid showed it loaded with red blood cells. We will have to consider, possibly, the inflammatory and neoplastic diseases. The blood in the ascitic fluid may be due either to bleeding from an inflammatory disease, and probably a chronic one, in this particular case, or may be due to sequestration from a neoplastic type of disease. Therefore, the blood in the peritoneum, which this patient had, and the extremely high sedimentation rate would suggest either a chronic inflammatory disease or a neoplastic disease in the abdomen.

Soft Bowel Movements

The next thing we have to consider is the soft bowel movements. And, just briefly, to discuss some of the causes of soft bowel movements, we have enteric infections which may be bacillary, parasitic, or due to cholera, typhoid or paratyphoid, and others. The nutritional group, which may be due to pellagra or sprue, and she did have a sprue-like picture; the toxic and septic states are frequently associated with loose stools and she very definitely was toxic.

Food intoxication we won't consider.

Circulatory — There is here evidence of a disturbance such as occurs in cardiac decompensation and cirrhosis, both of which are frequently associated with soft stools.

Emotional disturbances we won't consider.

Incomplete intestinal obstruction has been ruled out by the X-ray.

Nonspecific infections, such as regional enteritis or chronic colitis have to be considered in this case and, finally, neoplasm of the stomach, pancreas or intestine are possible causes of numerous soft stools.

Phlebitis

The next thing we will consider is the phlebitis in the right lower extremity. We know the phlebitis is frequently associated with neoplastic diseases. In this case, it was attributed to a cut-down on a vein, which may or may not have been the case. Nevertheless, we know that carcinoma of the pancreas is very frequently associated with phlebitis in one place or another and that the phlebitis may extend into the abdomen to produce a mesenteric venous thrombosis within the abdomen. Phlebitis should be considered in the differential diagnosis. Here we have another point for neoplastic disease.

Vaginal Discharge — The vaginal examination was presumably reported as normal. Anyway, it is strange for me to see a lot of vaginal discharge in the presence of a normal pelvic examination. The evidence here points to either an inflammatory or a neoplastic disease of the pelvis.

If I had to stick my neck out, I'd say that the patient had some sort of a neoplastic disease, probably a carcinomatosis in the abdomen with the primary site undetermined.

Dr. Postlewaite:

Now that we have an adequate surgical investigation — and I'm amazed we even got a conclusion from a surgeon — we must continue in the medical vein of confusing the case completely.

The patient was 73, was being treated — or should have been treated — for an Addison-like syndrome. Now, the question is, did the Addison-like syndrome come on suddenly? Was she asymptomatic a week prior to admission, or is this a long-term illness that was terminated by a pulmonary embolism?

Acute Accident

If it is an acute accident, and if we're dealing with shock, she didn't show the picture of it on admission, having a silent abdominal swelling. Ascites is not part of the picture of Addison's disease. They do not have ascites unless they've been treated. It's interesting that in 1935, 80 per cent of them were dead in three years. In 1956, about 50 to 60 per cent of them are dead in five years. We still haven't conquered Addison's syndrome or disease.

It is also true that whereas 80 to 90 per cent of them were tuberculous in origin in the past century, now perhaps less than 25 per cent have a tuberculous etiology and some references refer to less than one out of ten. Others show nothing to account for it, or neoplastic metastasis.

Deteriorated Electrocardiogram

Now, the electrocardiogram here deteriorated and it is interesting that potassium intoxication occurring in presumably good renal balance may have been an acute situation secondary to adrenal disfunction.

She consistently had low total fluid content which is the problem of fluid volume. She consistently had distributional shifts. They were abnormal and I presume she died with a relatively good balance having been given cortisone which was the ideal treatment. We think she died with a pulmonary embolus.

Vomiting

Where was the fluid being lost? Vomiting must be considered in this case as important. But the question is, what was the vomitous fluid? People of this age rarely have hydrochloric acid in the stomach. Therefore, they vomit actually a great deal of chloride-ions, and also a great deal of electrolytes, almost the consistency of plasma. Potassium and sodium are lost by vomitus. Now, by diarrhea, a great deal of sodium is lost, and, in addition, calcium which she could poorly sacrifice.

So that it isn't going to be just one ion as against the other. It's going to be multiple ions lost. Now, in addition, we gave her a real depletion of both protein and electrolyte and water by our abdominal taps, — it interested me that we failed to make the diagnosis by the tap. Carcinoma should have shown up on such a repeated tap. She lost protein and her proteins ended up very low.

Addison's Disease

She presented throughout a characteristic clinical picture of Addison's disease.

The terminal phase in fluid replacement problems would take hours to discuss, but to me there may be something significant we could have overlooked. Addison's is supposed to cause failure of resistance. So she may have a hidden septecemia which hasn't been brought out, and the so-called Waterhouse-Friderichsen syndrome.

Now, to my knowledge, there must be all grades of it. They don't all have to have hemorrhages and apoplectic-like processes and they can respond to salt replacement and to the use of the corticoids.

I think the terminal event is pulmonary embolus, and I think the pathology that is causing her ascites is vague.

We are betting on a malignancy.

We think the adrenal is secondarily knocked out.

Dr. Saul B. Appel:

I am afraid that if this patient fits into Addison's disease, Addison must be turning over in his grave right now. And I am referring to adrenal insufficiency. I fail to see how he could determine adrenal insufficiency in a patient who came in with a normal, in fact, slightly elevated, blood pressure, but at the age of 73 we'll call it normal, and maintained that blood pressure for a considerable length of time until she obviously was going into the terminal phase of her illness. Three of the sodium determinations were 142 ME per liter which is about normal. And clinically, she doesn't suggest adrenal insufficiency to me at all.

Patient Febrile

The patient was febrile most of the time and had a marked shift to the left. As we all know, a patient in this age group is less likely to run a high fever than a younger individual, and therefore we can say that she was really febrile. This probably represented some acute or chronic inflammatory disease.

Now, it is possible for a patient like this to have had a chronic pyelonephritis and eventually go into renal insufficiency with vomiting, with diarrhea, all of which would have fitted into a uremic pattern and gotten her into all the electrolyte trouble. However, I do not see any evidence that would substantiate the diagnosis of Addison's disease or adrenal insufficiency, neither in the first few days of her illness, nor at the end.

Dr. Wayne L. Lorentzen:

I didn't see this patient. I don't have anything further to add as far as the diagnosis. However, there is something I want to mention about the therapy. Ever since, I guess since the time of Gavin, they have warned against paracentesis, especially removing large quantities of fluid.

It's been very frequent that a patient would be tapped and then shortly afterwards they would go into shock and then later die and the principal reason is that the fluid that they have in their bellies is, shall we say, not being used at all, but it does contain large amounts of electrolytes, proteins and various substances which the blood has poured into it.

And if you remove it, it doesn't make too much difference what the cause, of course, but if you remove this large body of fluid, almost immediately you will have a pouring in of electrolytes and proteins again. And I think that a lot of the picture in this patient is due to that one factor.

Dr. Celso C. Stapp:

I will take up the matter of the vaginal examination. In a woman who has a great deal of ascites, I would say that a significant vaginal examination would be almost impossible due to the presence of her ascites. About all you could determine by doing a vaginal examination on her would be to look at her cervix, see the vagina, and see if the cervix could be moved around with the examining finger.

I doubt if you could feel the fundus of the uterus on a person who had this much ascites, and it is rather notorious that a person of this age, if they have a CA of the ovary or of the fundus of the uterus, you may not be able even to distinguish the margin of the uterus or of the ovary.

Dr. Francisco Licon:

What is the amount of fluid that can be safely removed?

Dr. Bornstein:

Personally, I think that it varies with the size and shape of the patient to a very considerable extent, the speed with which it is removed, and the condition of the fluid. I don't think you can make any general rule.

Dr. Lorentzen:

I don't think anyone really knows how much you can remove safely, but I think the best criterion is to remove just enough to give the patient relief and no more.

Clinical Diagnosis:

Ascites, fever of unknown origin, probable malignancy.

Dr. Dow's Diagnosis:

Malignant disease, primary site undetermined, with carcinomatosis in the abdomen.

Dr. Postlewaite's Diagnosis:

Malignancy, primary site undetermined, with ascites and metastasis to adrenal glands. Pulmonary embolus.

Pathological Diagnosis:

Tuberculous peritonitis, secondary to tuberculous salpingitis. Acute hemorrhagic pancreatitis.

Pathological Discussion:

Dr. Bornstein:

On autopsy, we found a fairly well developed, elderly woman, with a markedly distended abdomen which showed a fluid wave. Each pleural cavity contained about 1,000 ccs. of straw colored fluid. Present in the thorax were several caseated lymph nodes. The peritoneal cavity showed numerous adhesions and was filled with a large amount of fluid. The peritoneum itself was dull, hyperemic, and covered with fibrin.

This obviously represents a peritonitis of a subacute type. In searching for the source of this peritonitis, the more common causes, such as a perforated appendix, ulcer, or malignancy were easily ruled out. Of the retroperitoneal structures, the pancreas was most remarkable, being edematous and swollen.

Large areas of the pancreas were hemorrhagic. Some nodules had a yellowish, necrotic appearance: in brief, the typical picture of an acute hemorrhagic pancreatitis.

Abnormal Uterus

The next organ grossly abnormal was the uterus, which was distended and filled with pus. The cervical os was nearly occluded. The problem, then, was to assess adequately the roles of the pancreas and uterus in the production of this peritonitis. The change in the pancreas was obviously of a much more recent origin than the peritonitis and therefore could hardly be held responsible. Inasmuch as the uterus was not perforated, any peritonitis originating from the uterus necessarily must have been carried through the tubes.

Our first step, therefore, was a histological examination of the tube. The histological examination of the tube (Fig. 1) revealed a typical tuberculous salpingitis and we were able to demonstrate acid fast organisms in the sections. It was, therefore, not too much of a surprise when similar tuberculous granulomata were found in the peritoneum.

Genital Tuberculosis

In summary, then, we are dealing with a genital tuberculosis, probably secondary to the caseous lymphadenitis in the thorax. The subsequent tuberculous peritonitis was the direct extension of the tuberculous salpingitis. This explains the first part of the history with ascites. The superimposed hemorrhagic pancreatitis produced the shock-like picture which was present in the last few days of the patient's life.

Southwestern New Mexico Society to Meet in Deming September 12

The next regular meeting of the Southwestern New Mexico Medical Society will be held in Deming, New Mexico, on September 12. The Silver City group will be host for the meeting. Dr. W. J. Hossley, Jr., of Deming is President.

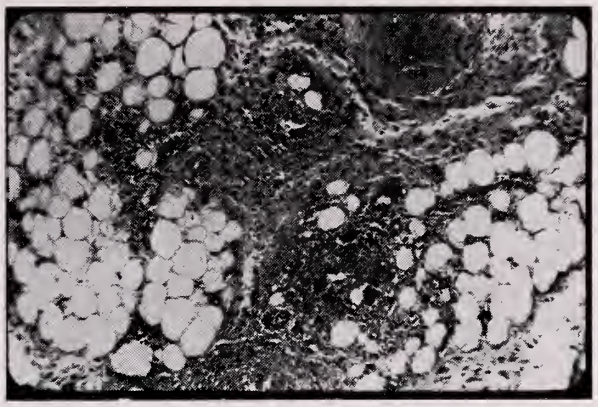


Figure 1

The American Congress of Physical Medicine and Rehabilitation

The 34th annual scientific and clinical session of the American Congress of Physical Medicine and Rehabilitation will be held September 9-14 inclusive, at The Ambassador, Atlantic City, N. J.

Full information may be obtained by writing to the executive secretary, Dorothea C. Augustin, American Congress of Physical Medicine and Rehabilitation, 30 North Michigan Avenue, Chicago 2, Illinois.

Chest Physicians to Meet in June in Chicago

The 22nd Annual Meeting of the American College of Chest Physicians will be held at the Hotel Sherman, Chicago, Illinois, June 6 through 10. The scientific program will include prominent speakers on all aspects of heart and lung diseases. In addition to formal presentations, there will be a number of symposia, round table luncheon discussions, seminars, and motion pictures.

The Fireside Conferences, which were inaugurated at the annual meeting of the College in 1955 and proved to be so popular, will be repeated. At this session, more than 50 experts will be present to lead the discussions on many subjects of current interest in the specialty of diseases of the chest.

Examinations for Fellowship in the College will be held on Thursday, June 7. On Saturday evening, June 9, more than 150 physicians will receive their certificates of Fellowship at the annual Convocation, which will precede the Presidents' Banquet.

All interested physicians are cordially invited to attend the 22nd Annual Meeting of the College; there is no registration fee. Copies of the program may be obtained by writing to the Executive Offices, American College of Chest Physicians, 112 East Chestnut Street, Chicago, 11, Illinois.

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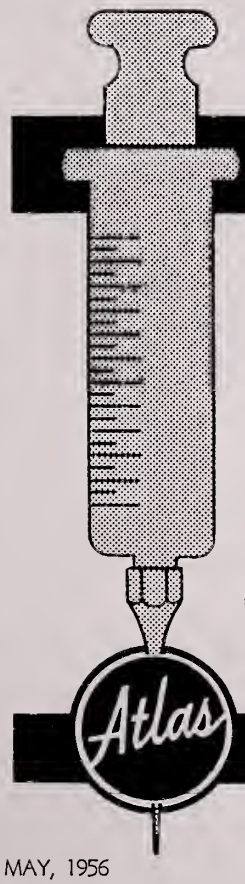
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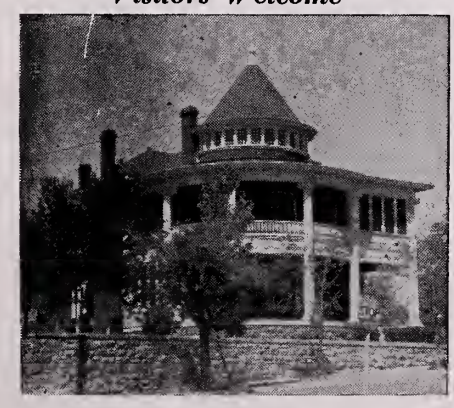
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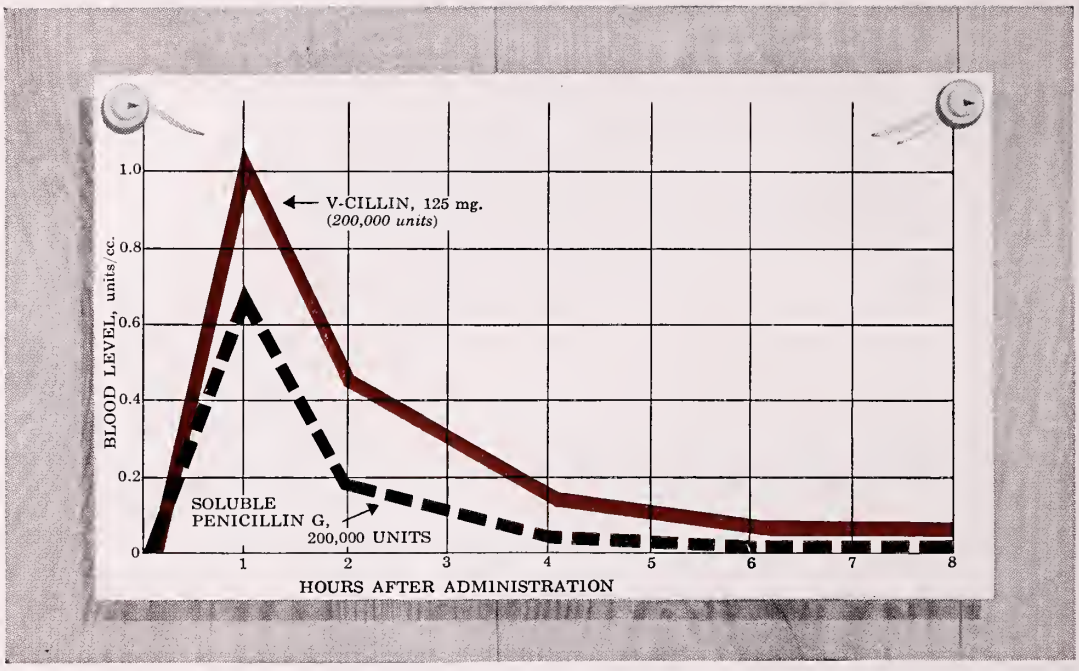
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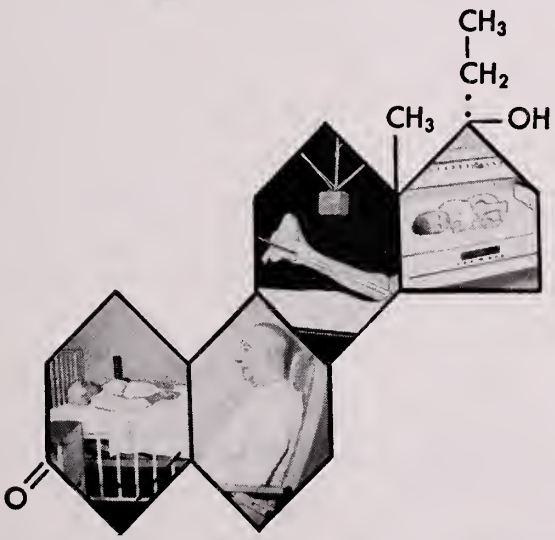
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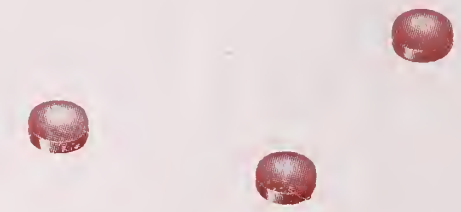
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What with sneezing, wheezing and scratching, being allergic is fatiguing business. As a result your hypersensitive patients suffer from emotional depression in addition to their allergic symptoms.

Now, with Plimasin, you can give these patients a lift—and obviate sedative side effects. Plimasin is a combination of a proved antihistamine and Ritalin—a new, mild psychomotor stimulant. Plimasin not only relieves the symptoms of allergy but counteracts depression as well.

Dosage: 1 or 2 tablets every 4 to 6 hours if necessary.

Tablets (light blue, coated), each containing 25 mg. Pyribenzamine® hydrochloride (tripelennamine hydrochloride CIBA) and 5 mg. Ritalin® hydrochloride (methyl-phenidylacetate hydrochloride CIBA)

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2/2267M

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MUSCLE-RELAXING ACTION

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(2-methyl-2-*n*-propyl-1,3-propanediol dicarbamate)

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For significant relief in myositis, osteoarthritis, backstrain, and related conditions marked by:

- ***Muscle spasm***
- ***Stiffness and tenderness***
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- ***Pain***

As a superior muscle-relaxant, EQUANIL offers predictable action and full effectiveness on oral administration. It does not disturb autonomic function and is relatively free from gastric and other significant side-effects. Its anti-anxiety property provides important correlative value.

Usual dosage: 1 tablet t.i.d. The dose may be adjusted either up or down, according to the clinical response of the patient.

Supplied: Tablets, 400 mg., bottles of 50.

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anti-anxiety factor
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*TRADEMARK

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Few expectant mothers wrestle for a living, but most have important daily schedules to maintain.

This new Boyle prenatal formula provides 10 mg. of Vitamin B_6 (in tablet t.i.d.) for proper protein metabolism and to aid in preventing nausea. This is in accordance with the findings of Wachstein and Gudaitis in the "Journal of Laboratory and Clinical Medicine," 42:1, 98-107 (1953): "It seems the growing fetus drains the maternal source of Vitamin B_6, resulting in a disturbance of normal protein metabolism. It is suggested that pregnant women be given 10 mg. of pyridoxine hydrochloride daily."

In addition, phosphorus-free calcium lactate in the Boyle formula conforms to the findings of diet authorities Page and Page, "Obstetrics and Gynecology," 1:94-100 (1953): "Leg cramps may be either prevented or relieved to a significant degree by the use of calcium salts free of phosphorus."

Boyle Obnatal also contains Vitamin K for hypoprothrombinemia and 60 mg. available iron.

Suggested daily dose of 1 capsule-shaped tablet t.i.d. supplies:

CALCIUM LACTATE USP	2.25 Gm.	CALCIUM PANTOTHENATE	5.0 mg.
VITAMIN B_6	10.0 mg.	VITAMIN A (acetate)	6,000 USP units
VITAMIN K	1.5 mg.	VITAMIN D	600 USP units
FERROUS SULFATE USP (Iron content 60 mg.)	300.0 mg.	IODINE	0.15 mg.
VITAMIN B_{12}	10.0 mcg.	COPPER	1.0 mg.
VITAMIN C	100.0 mg.	MAGNESIUM	15.0 mg.
VITAMIN B_1	4.0 mg.	MANGANESE	4.5 mg.
VITAMIN B_2	2.5 mg.	MOLYBDENUM	0.15 mg.
NIACINAMIDE	60.0 mg.	ZINC	2.25 mg.
FOLIC ACID	0.3 mg.		

Bottles of 100 and 1000 capsule-shaped tablets at all pharmacies.

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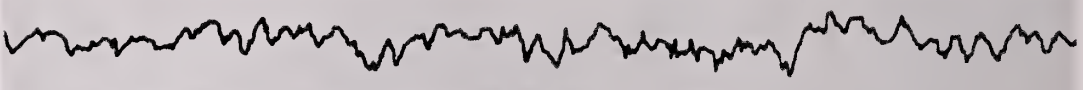
BOYLE & COMPANY Bell Gardens, California

WHAT IS THE DIFFERENCE BETWEEN A TRANQUILIZER AND A SEDATIVE?

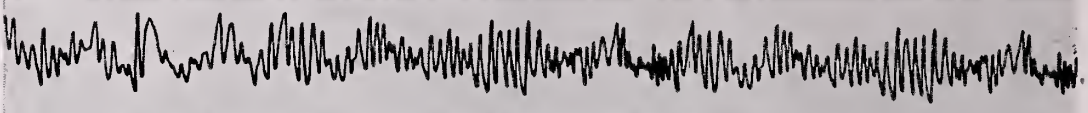
Comparison of the effect of Raudixin (tranquilizer) and a barbiturate (sedative) on the cortical electroencephalogram



No drug.



After Raudixin. E. E. G. not altered.



After barbiturate. Typical "spindling" effect.

Because barbiturates and other sedatives depress the cerebral cortex, the sedation achieved is accompanied by a reduction in mental alertness.

Raudixin acts in the area of the midbrain and diencephalon, and does not depress the cerebral cortex. Consequently, the tranquilizing (ataractic) effect achieved is generally free of loss of alertness.

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Squibb Whole Root Rauwolfia Serpentina

DOSAGE: 100 mg. b.i.d. initially; may be adjusted within a range of 50 mg. to 500 mg. daily. Most patients can be adequately maintained on 100 mg. to 200 mg. per day.

SUPPLY: 50 mg. and 100 mg. tablets; bottles of 100, 1000 and 5000.

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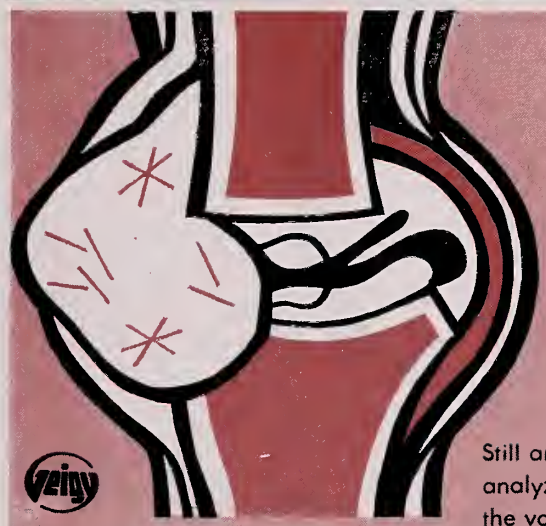
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in relieving arthritis and allied disorders

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BUTAZOLIDIN being a potent therapeutic agent, physicians unfamiliar with its use are urged to send for detailed literature before prescribing it.

1. Denko, C. W.; Ruml, D., and Bergenstal, D. M.: Am. Pract. & Digest Treat. 6:1865, 1955.
2. Holbrook, W. P.: M. Clin. North America 39:405, 1955.

BUTAZOLIDIN® (phenylbutazone GEIGY). Red coated tablets of 100 mg.

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Reserpoid *(Pure crystalline alkaloid)*

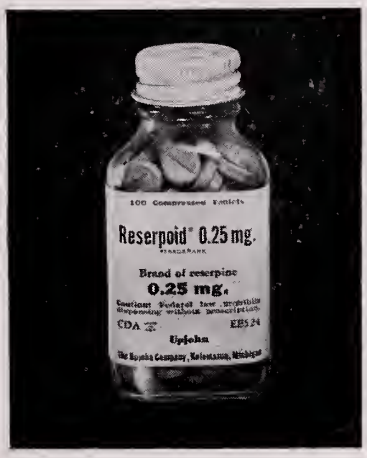
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or 4.0 mg.

The elixir contains:
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ORANGE, N. J.

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Vitamin B_2 (riboflavin)	10 mg.	Manganese	1.0 mg.
Vitamin B_6 (pyridoxine hydrochloride)	2 mg.	Cobalt	0.1 mg.
		Potassium	5.0 mg.
Vitamin B_1 (mononitrate)	10 mg.	Molybdenum	0.2 mg.
Nicotinamide (niacinamide)	100 mg.	Iron	15.0 mg.
Vitamin C (ascorbic acid)	150 mg.	Copper	1.0 mg.
Vitamin A	25,000 units	Zinc	1.5 mg.
Vitamin D	1,000 units	Magnesium	6.0 mg.
Vitamin E	5 I.U.	Calcium	105.0 mg.
		Phosphorus	80.0 mg.

MYADEC Capsules are supplied in bottles of 30, 100, 250, and 1000.

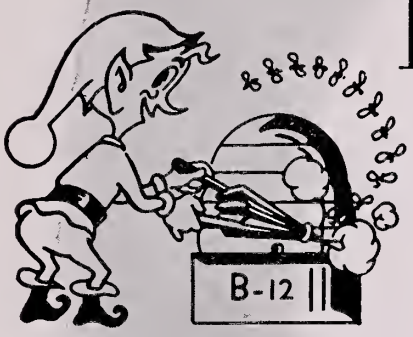
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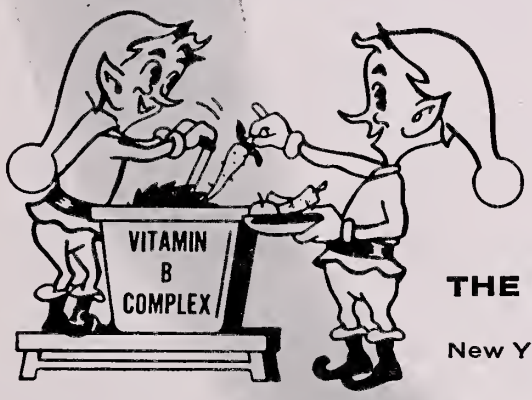


Peptonized iron is virtually predigested—better absorbed, better utilized and less toxic than ferrous sulfate. Anemias refractory to other forms of iron will often respond promptly to Livitamin therapy.

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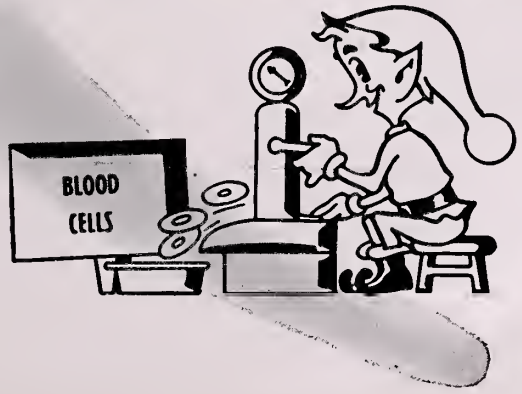
Iron peptonized (Equiv. in elemental iron to 71 mg.)	420 mg.
Manganese citrate, soluble	158 mg.
Thiamine hydrochloride	10 mg.
Riboflavin	10 mg.
Vitamin B_{12} (crystalline)	20 mcg.
Niacinamide	50 mg.
Pyridoxine hydrochloride	1 mg.
Pantothenic acid	5 mg.
Liver fraction 1	2 Gm.
Rice bran extract	1 Gm.
Inositol	30 mg.
Choline	60 mg.



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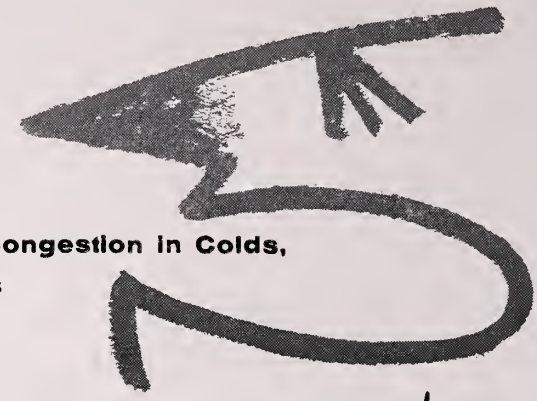
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Summit, N. J.

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Each Theragran Capsule, or 5 cc. teaspoonful of Theragran Liquid, supplies:

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Thiamine	10 mg.
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Ascorbic acid	150 mg.

Usual Dosage: 1 or 2 capsules or teaspoonfuls daily. Infants: Not more than 1 teaspoonful daily.

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Official Journal of

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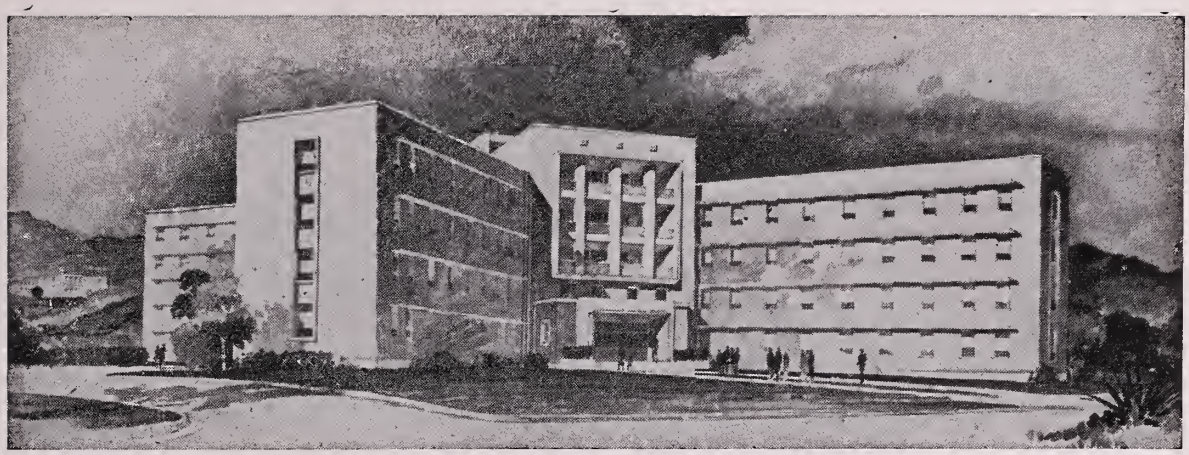
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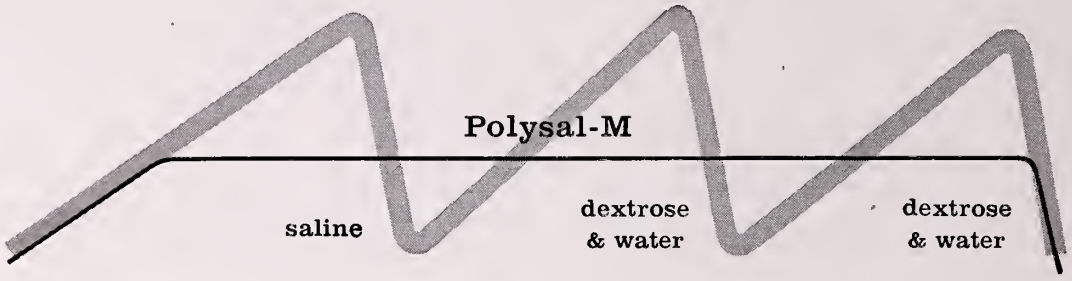
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Optimum daily requirements of electrolytes, carbohydrates and water are met by the daily infusion of 3 liters of Polysal-M.

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Since the potassium content is limited to 16 mEq per liter, the standard rate of infusion is used. Contents in mEq per liter: Na_40, K_16, Ca_5, Mg_3, Cl_40, HCO_3_ 24. (Note that Cutter Polysal-M contains calcium.)

Contraindications: ANURIA and oliguria; HYPERPOTASSEMIA associated with chronic nephritis, untreated diabetic acidosis, severe burns, massive traumatic injury, and anuria.

Available with 2½%, 5%, or 10% dextrose.

Talbot, Crawford and Butler* have reemphasized the importance of homeostatic mechanisms of the body in fluid and electrolyte therapy. Their report shows that in the presence of adequate urine flow, the body is able to retain or excrete water and electrolytes in accordance with body needs.

*Talbot, N. B., Crawford, J. D., and Butler, A. M., "Homeostatic Limits to Safe Parenteral Therapy". New Engl. J. Med., 248, 1100 (1953)

Simplify for Safety with

SINCE CUTTER 1897 **Polysal-M**

CUTTER Laboratories
BERKELEY, CALIFORNIA

Southwestern MEDICINE

VOL. XXXVII JUNE, 1956 No. 6

CURRENT THERAPY

Diagnosis of Pheochromocytoma

By Jack A. Bernard, M. D., El Paso

Elsewhere in this issue there is a report of a pheochromocytoma.

The exact incidence of these tumors is unknown but the incidence has been found to be around 0.5 per cent in hypertensives subjected to sympathectomy. This means that out of every 200 hypertensives whom we see in our daily practice, statistically there is one case of pheochromocytoma. Undoubtedly therefore we have all had unrecognized cases in our practice.

Numerous tests for pheochromocytoma have been introduced since Roth and Kvale first introduced the histamine test in 1945, yet few routine tests are done except in the larger medical centers. More routine screening tests should be carried out in our offices, if we are to diagnose these tumors. These tests should be simple and without alarming side effects so that the busy physician can perform them easily without fear of harmful reactions.

Repeat Tests

Therefore it is our intent to repeat the simplest tests, and emphasize their use as an office procedure in the hope that more physicians will set up these procedures and routinely test their hypertensives and the other patients indicated in order to screen out some possible cases for further study and confirmation.

First it is important to recognize that there are two types of cases: one type with a normal blood pressure except during a paroxysm associated with the typical clinical symptoms characteristic of the syndrome; the second type in which patients have persistent hypertension indistinguishable from essential or malignant hypertension.

In children with reported cases of pheochromocytoma, sustained hypertension is much more common. The classical paroxysmal picture is rare.

Histamine Tests

For those patients with normal blood pressure and hystory of paroxysmal hypertensive attacks, the histamine test of Roth and Kvale is simple and has produced no serious side effects, (except rarely a severe hypertensive response in a patient with pheochromocytoma). The test is carried out as follows: A basal blood pressure is obtained and histamine is then injected rapidly intravenously in dosage of 0.025 to 0.050 mg. of histamine base in 0.5 cc. saline solution. A rise in arterial pressure approximately 100 mm. of Hg in excess of the elevation produced by the cold pressor test constitutes a positive response.

The cold pressor test (should be performed first as a control) is performed after a rest period of at least 15 minutes and a basal blood pressure is obtained. The hand is immersed in ice water for 1 minute and blood pressure readings are taken at ½ to 1 minute intervals from the onset. Barbiturates and other sedatives should be withdrawn before the test as they have an inhibitory action on the cold pressor test.

Regitine Recommended

For patients with sustained hypertension the use of Regitine as a routine office procedure is recommended and urged. The procedure is attended by remarkably few side effects. After a base line blood pressure has been obtained, 5 mg. Regitine in 1 cc. of solution is given intravenously and blood pressure readings are made every thirty seconds for three minutes and then every minute for seven minutes or longer. A positive Regitine test consists of a drop in blood pressure that exceeds 35 mm. of mercury systolic and 25 diastolic.

False negative Regitine tests have not been reported but false positive results may occur in: 1. Patients who are heavily sedated or anesthetized, 2. In patients with hypertension and uremia, and 3. In patients whose blood pressure is in the low hypertensive range (from 140 to 170 mm. systolic and 90 to 110 diastolic). For the latter patients; that is, for patients with BP lower than 170/110, it is preferable to use the provocative test of histamine. Regitine will depress the blood pressure of patients with essential and renal hypertension, but usually less than 35 mm. of mercury systolic and 25 diastolic.

Some False Responses

It is therefore evident that Regitine will give some false positive responses, but this does not deter its usage as a screening test. All positive cases can be

(Continued on page 349)

A Case of Hypertension Due to Pheochromocytoma

By H. M. Gibson, Jr., M. D., and C. P. C. Logsdon, M. D., El Paso

Hypertension is a very common symptom of disease, one manifestation of pathology that we all see, whether we do general practice or a specialty; but we are often prone to forget that it is only a symptom and not a complete diagnosis.

It is true that we have to classify a very large number of cases as essential hypertension even after a complete and minute examination; however, the number that we can attribute to definite and sometimes correctible causes is constantly increasing. It, therefore, behooves us to redouble our efforts to determine the precise cause of all cases of hypertension that we may see.

To name hyperthyroidism, anxiety states, nephritis, congenital circulatory defects, polycystic kidneys, and adrenal medullary tumors as causes of hypertension, is to call only a very small number of the disorders that may produce excessive blood pressure elevations.

This paper deals with a case of the last named variety — a functioning tumor of the medullary portion of the adrenal gland, called a pheochromocytoma. This tumor is an uncommon variety, true, but the results of a proper diagnosis are generally so spectacular that once a case has been seen, it imprints itself forever on one's memory.

Many Symptoms

The symptoms of this condition are many and varied but one thing is constantly present — hypertension. The elevated blood pressure may be constant or intermittent, but it is always there. The other symptoms cover an enormous range, but all can be duplicated by injecting large amounts of epinephrine or norepinephrine into the normal human.

The most common signs produced are tachycardia, severe perspiration, trembling and headache. Some less common tokens are abdominal pain, precardial distress and shortness of breath, blurred vision and vomiting.

The physical findings are usually indefinite. Rarely a mass can be felt. Sometimes making pressure over a certain area will precipitate an attack, but the patient appears ill and genuinely sick. As mentioned, tachycardia is usually present and a severe drenching perspiration is very often noted.

The routine type laboratory work of urinalysis and CBC shows us nothing. The B. M. R. is elevated in elevated blood sugar. Specific laboratory tests must 50 per cent of the cases [1]. About one-half also have be performed when the disease is suspected. These fall into three groups.

Histamine Injections

First is the stimulation of the secretion of epinephrine, i. e. Adrenergic. This is done by injecting histamine according to the method of Roth and Kvale [2]. If excess amounts of tissue are present in the body capable of manufacturing epinephrine or nor-epinephrine, then the patient's blood pressure will rise markedly in response. This test should be used only in periods of normotension.

The second and most practical test is using the group of substances that will neutralize excessive adrenalin, i. e. adrenolytic. Many chemicals are used, but we believe Regitine is the most reliable and safest for office work. If a patient's blood pressure is elevated and it is due to the presence of unnatural amounts of adrenalin, injection of this substance results in a prompt and profound drop in blood pressure. Certain conditions will sometimes cause a false positive reaction to a single test.

Third Group

The third group of special tests involves testing the urine for excretion of catecholamines (nor-epinephrine and epinephrine). It is reputed that this test is the most accurate of all, being elevated in all phases of the blood pressure cycle. The method is complicated but is available in more and more laboratories [3].

Because the medulla of the adrenal gland and the sympathetic chains have a common embryological origin, these tumors may arise not only in the adrenals but anywhere sympathetic nerve tissue is found. The great majority occur in the adrenals themselves. Thus, precise localization becomes a problem. Roentenography aids us considerably. Retroperitoneal air insuflation is our most valuable aid, done by the method of Reese and Maclean [4]. We frequently combine this with I. V. P.'s or retrogrades to further assist in pinpointing the lesion.

Summary of Diagnosis

In summary of the diagnosis, the essential element is suspicion. No one test may be considered diagnostic. They must all be added together, and the total results considered in making the diagnosis.

The treatment is surgical. Because of the ease with which both adrenals and the entire lumbar sympathetic chain can be explored through it, the transperitoneal approach is, in my opinion, far superior to any other single incision or combination of cuts.

The problems of anesthesia should be mentioned. Extremely able assistance was given in this case by Dr. J. Walker of El Paso. When the tumor is first approached even minor handling produces increases in blood pressure. This is handled by titrating Regitine intravenously to control it. As soon as the blood supply of the tumor is isolated and clamped, then the

problem becomes one of extreme hypotension. This is combated by Levophed preferably; although sometimes adrenalin itself is necessary. This must be maintained for a period varying from a few hours to several days until the opposite adrenal gland begins to function again.

Case History

The patient was 44 year old white male who was a farmer.

C. C. "High blood pressure."

P. I. The onset had been almost fifteen years ago when the patient first started having "spells". A typical spell consisted of first noticing a "fainty feeling" followed by shortness of breath and palpitation. These attacks were almost always followed by a drenching sweat.

At first the attacks came every few months, but have gradually increased in both frequency and severity. At the time of admission the attacks were occurring every 5 to 7 days and lasting for several days at a time. At various times the blood pressure had been found elevated during the seizures, but it was always normal in between. At one time the systolic pressure had been caught at 270, and it usually was in excess of 230. Past history and family history were non-contributory.

P. E. The patient was a thin male of 45 who appeared to be chronically ill and exhausted but not emaciated.

B. P. 140/70 Pulse 80

Examination was negative except that the right kidney could be palpated. Pressure on this area did not bring on an attack.

C. B. C. showed a mild leucocytosis but was otherwise negative. The urine was negative.

I. V. P.'s in conjunction with retroperitoneal air insuflation revealed the right kidney displaced downward by a large mass above it. The left kidney was normal.

Several I.V. injections of Regitine resulted in blood pressure drops of 100 to 120 points in the systolic pressure. I. M. injection produced the same results.

On September 30, 1956, the tumor was approached transperitoneally and removed. Immediately the blood pressure dropped to unobtainable levels. Levophed in conjunction with I. V. fluids kept the pressure up to between 90 and 100 systolic. This was no longer necessary after 12 hours. The blood pressure stabilized itself at about 100 systolic.

The remainder of the post operative course was uneventful.

Pathological examination disclosed a typical pheochromocytoma.

The patient was last heard of in January, 1956, and was gaining weight. The systolic blood pressure continued to run between 110 and 120 systolic.

The essence of this article is that every hypertensive case should include in its work-up (1) an I. V. P. and (2) a Regitine test. If either are suspicious for a pheochromocytoma, then the urinary catecholamines should be determined.

References

1 McDowell, F. W.: J. Internatl Surgeons, 19:365-72. March 1953

2 Roth and Kvale: A. M. J. Med. Sci., 210:653, 1945

3 Goldenberg, Marcel et al: A. M. J. Med., 16:310-327, March 1954

4 Reese and Maclean: Canada M. A. J., 67:632-637. December, 1952

Diagnosis of . . . . .

(Continued from page 347)

studied further by other tests, as no one drug is infallible. Repeated tests, perhaps a battery of tests, may be necessary to establish the diagnosis.

For confirming a positive Regitine test the Benodaine test may be carried out, but only in the hospital, as it may produce considerable side reactions. Basal blood pressures are taken while a slow intravenous drip of isotonic saline is maintained and then Benodaine is injected over a period of two minutes, 0.25 mg. per kilogram of body weight, and blood pressure readings are taken every minute for 10 or 15 minutes or longer. For the average adult the required amount will therefore be between 15 and 20 mg. In the presence of a pheochromocytoma, a fall in BP usually occurs within 5 minutes, and averages 50 mm. mercury systolic, lasting approximately 30 minutes.

Smaller Dosage

It would seem wise to use smaller than the calculated dosage of Benodaine in critical patients as Benodaine may produce serious side reactions such as cardiac or cerebral episodes. It may also cause apprehension, flushing, palpitations, substernal pressure and dyspnea. Severe pressor reactions may occur and amyl nitrite pearls should be available for the rapid severe blood pressure rise that may occur.

Finally a battery of tests may be necessary to confirm the diagnosis: such as Mecholyl, Etamon, Dibenamine. But it is our purpose to emphasize and encourage the routine use of the office procedures: Histamine for the paroxysmal cases, and Regitine for the sustained hypertensives, until the determinations of the urinary secretion of the catecholamines, the reaction products of epinephrine and nor-epinephrine, or some other chemical diagnostic procedure becomes more generally available.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

By Andrew M. Babey, M. D., Las Cruces, N. M.

1. "When the bacteriological and serological studies have yielded negative results, when appropriate therapeutic tests have been negative, when biopsies of the bone marrow and accessible lymph nodes fail to give a clue, and when x-ray studies of the lungs and bones disclose nothing of significance, the cause of the fever is usually tuberculosis, Hodgkin's disease or lymphosarcoma, one of the collagen diseases, or a hidden neoplasm." A. Mc Gehee Harvey, and James Bordley III; *Differential Diagnosis;* W. B. Saunders Company; 1955; p. 301

2. "Vertigo is often used in this strict sense—to denote that the sensation of movement is one of rotation. But there is nothing to be gained by adhering to this definition, for we know that other equally distressing forms of giddiness, of identical aetiology and significance, may be characterized not by a revolving sensation but by a sense of falling through space, or by some movement of self or surroundings in any other plane. For example, the patient may describe how the ground rocks beneath him or appears to rush up towards him. He may see walls or objects tilting this way or that; the ceiling may look as if it is falling in or the pavement as if it were swaying." John D. Spillane; *British Med Jour.;* Sept. 3, 1955; p. 612

Meniere's Disease

3. "In Meniere's disease the use of vasodilator drugs such as histamine and nicotinic acid and the search for focal sepsis or allergens all have their advocates, but in my experience are not rewarding." Spillane; *loc. cit.;* p. 614

4. "A sure sign of intellectual vigour in a teaching hospital is regular meetings variously organized as clinicopathological conferences or as "grand rounds." By these meetings—the exact label does not matter—the visitor can soon gauge the intellectual climate of the community. If he finds the attendance good; the discussion natural and easy, with the most junior free to speak and assured of a patient hearing; the dubious or unsupported assertion, whoever makes it, promptly, firmly, and courteously criticized; and the quality of exposition and deduction scientifically sound—then he can be sure that the climate is healthy." S. Melville Arnott; *The Lancet;* Oct. 15, 1955; p. 785

5. "Formerly, what I call "the chief complex" predominated. Teaching hospitals tended to be divided into separate firms and departments, the headship of which was achieved automatically by the passage of years. (Surely it is a biological absurdity to assume that ability, any more than somatic growth, continues through life?) The system demanded that the chief should receive respect amounting almost to servility from his juniors. His word was law and it was unheard of for a junior to engage him in debate." Arnott; *loc. cit.;* p. 785

"No" Men

6. "Those of us who wish to preserve our faculties in some sort of useful working order surround ourselves with "no"-men, to ensure that our standards shall not sag with our waist-lines." Arnott; *loc. cit.;* p. 785

7. "Terramycin, gentian violet and piperazine citrate are the drugs of choice at the present time. The pinworm is a parasite too tough to kill. Terramycin simply deforms the eggs so that a certain percentage lose their viability. We do not know quite how piperazine citrate acts. Gentian violet appears to have some effect on the adult worm as well as on the eggs. What we aim to do is to establish a cycle of biologic attrition in which more of the parasites die off than are acquired over a particular period of time. That seems to be the best that can be done." B. H. Kean; *American Journal of Medicine;* Oct. 1955; p. 626

8. "In order properly to evaluate a therapeutic agent in the treatment of pinworm it is necessary to ascertain first what can be accomplished by stopping the child from scratching at night. If this measure were successful the cure rate for pinworm would approximate 100 per cent. The adult female of the pinworm lives only eight weeks; hence if reinfection can be prevented the disease will be cured in eight weeks." Kean; *loc. cit.;* p. 626

Clean Pajamas

9. "The ideal course in pinworm therapy would be to wash and iron the pajamas daily. They do not need to be sterilized—washing and ironing are sufficient." Kean; *loc. cit.;* p. 627

10. One hygienic measure which I consider absolutely crucial is the shower in the morning, not at night, because it is in the morning that you wash away the eggs which are deposited during the night." Kean; *loc. cit.* p. 627

11. "There is considerable demand for enemas in the treatment of pinworm. The mother thinks that something is really being done when a pinworm or two is washed out. The fact is that enemas have never proved successful in curing pinworm no matter what has been put in the solution." Kean; *loc. cit.;* p. 627

Hypopituitarism

12. "The most important and most conclusive investigation is simply to look at the vulva. In hypopituitarism severe enough to produce coma there is no hair on the mons and only a few short hairs on the labia majora. If the patient has no pubic hair, confirmation of the diagnosis of hypopituitarism can be obtained from two sources. Firstly, the thyroid is too small to palpate; a palpable gland almost negatives the diagnosis. Secondly, there is atrophy of the genital tract. The vulva and vagina are atrophic, the cervix is very small and may be little more than a dimple, and the uterus is correspondingly small; these findings are very significant if the patient is under 45, though they are obviously of much less importance in a woman of 60." H. S. Sheehan; *British Med. Jour.;* Oct. 22, 1955; p. 1022

13. "For the benefit of those who may only have studied the rather misleading accounts of hypopituitarism which were current in medical textbooks a few years ago, three points must be made clear. Firstly, the patient's nutrition is usually quite satisfactory. A significant degree of emaciation throws serious doubts on the diagnosis of hypopituitarism, though it does not necessarily disprove it. Secondly, though no woman looks her best when she is in coma, these patients do not show premature senility. Thirdly, the state of the teeth is quite irrelevant." Sheehan; *loc. cit.;* p. 1022

14. "Within a couple of hours after giving a large dose of intravenous glucose to a patient with hypopituitary coma the blood sugar may fall again to levels of 30 mg. or less. It is therefore important that, when the glucose has been begun, it should be continued for many hours, and that a careful watch on the blood sugar should be maintained afterwards." Sheehan; *loc. cit.;* p. 1023

15. "The patient is suffering not only from a total insufficiency of the anterior pituitary, but also from an extremely severe insufficiency of the adrenal cortex and of the thyroid. There is thus a very strong theoretical argument for giving adrenocortical and thyroid hormones. In practice, however, these treatments are disappointing. Cortisone, "eucortone," deoxy-cortone and salt, and testosterone have usually been given. Some of the patients have recovered gradually in the course of a day or two; others have died. There is no convincing evidence that these treatments changed the course of the coma from what it would have been if no treatment had been given. On the other hand, there is no evidence that cortisone is harmful in these cases, and thus there is no particular reason for withholding it if the doctor believes that it may do good." Sheehan; *loc. cit.;* p. 1023

Thyroid Dose

16. "It is stated in many textbooks that the administration of thyroid is very apt to produce coma in patients with hypopituitarism. There is no real evidence to support this idea, and in fact a dose of 2 gr. (0.13g.) of thyroid daily is usually quite harmless." Sheehan; *loc. cit.;* p. 1024

17. "It is well known that about five per cent of patients with classical acute nephritis have minimal abnormal urinary findings. Abnormal urinary constituents are, however, a crude index of disturbed renal function, and their absence should not lead to the assumption that the kidneys are healthy. The conspicuous retention of water and salt in such cases shows that renal function is altered." E. P. Sharpey-Schafer; *The Lancet;* Oct. 22, 1925; p. 841

18. "Cardiology, once a bedside art, is becoming an exercise in techniques—electronics, sound recording, cardiac catheterization, and angiograpy. It is a paradise for those who like gadgets and making things work." D. A. Longlea; *The Lancet;* Nov. 19, 1955; p. 1085

19. "Coeliac disease today remains one of a dwindling group of ailments that have to be recognized on purely clinical grounds, for there is no laboratory test to give the diagnosis the stamp of certainty." Wilfrid Sheldon; *loc. cit.;* Nov. 26, 1955; p. 1097

(To be continued)

Three Medical Meetings Scheduled in Mexico

Three medical meetings in Mexico have been announced and physicians from the United States, as well as Mexico, are invited to attend.

The International Congress of Radiologists will be held in Mexico City July 22-28. Physicians desiring information may write to Dr. Jose Noriega Limon, Oro 15, Mexico City 7, D. F.

The sixth National Reunion of Gynecologists and Obstetricians will be held Oct. 9-13 at Leon, Guanajuato, Mexico. Gynecologists and obstetricians from throughout Mexico will participate in this convention. Further information may be obtained from Dr. Jorge Gonzales Alba, Edificio Fabricas de Francia, Leon, Gto., Mexico.

The twelfth annual convention of Medicos de Provincia will be held in Durango Nov. 25-27. Presenting the scientific program will be physicians from all north Mexico. Handling arrangements is Dr. F. Perez Carranco, Independencia 202 Sur, Durango, Mex.

The national Pediatricians Convention for Mexico was held in University City in Mexico City May 1-5.

Dr. C. Albores Culebro,
Esq. Hgo. y Rodriguez,
Torreon, Coahuila.

MEETINGS

Dr. Hinchey of San Antonio Heads Texas Orthopaedic Association

Dr. John J. Hinchey of San Antonio was elected President of the Texas Orthopaedic Association at its annual meeting held in Galveston on April 23rd in connection with annual sessions of the Texas Medical Association.

Dr. Lawrence Griffin of Austin was elected Vice President and Dr. Margaret Watkins of Dallas was re-elected Secretary-Treasurer, Dr. Paul C. Williams of Dallas is the retiring President.

A total of 110 physicians attended the one-day meeting which was held in Crow's Restaurant for the morning and noon sessions and in Randall Hall at the University of Texas Medical Branch at Galveston for the afternoon session.

Speakers and their subjects were: Dr. Rex Howard, Fort Worth, "Athletic Injuries of the Knee Joint"; Dr. Richard W. Leong, Houston, "Skeletal Changes Noted in a Series of Sickle-Cell Anemia Cases"; Dr. Louis W. Breck, El Paso, "The Post-Polio Calcaneo-Valgus Foot"; Dr. Bruce M. Cameron, Houston, "Leg Shortening Technique" (motion picture); Dr. Rex L. Diveley, Associate Professor in Orthopaedic Surgery at the University of Kansas School of Medicine, "The Painful Hip"; Dr. Paul C. Williams, Dallas, "Pitfalls in Spinal Surgery"; Dr. T. Wiley Hodges, Dallas, "Surgery of the Hip Joint"; Dr. Marvin P. Knight, Dallas, "Tissue Reaction to Metal Fixation: A Report on Three Cases"; Dr. R. A. Murray, Temple, "Reconstruction of the Thumb" (with motion picture); Dr. B. F. Boylston, Houston and Dr. Robert Milam, Houston, "Segmental Fractures of the Tibia"; Dr. Janet Travell, New York, Associate Professor of Clinical Pharmacology at Cornell University Medical College, "The Management of Pain Due to Skeletal Muscle Spasm".



Dr. John J. Hinchey

Official Publication

The Association elected at its business meeting to designate SOUTHWESTERN MEDICINE as its official publication. One of the oldest orthopaedic organizations west of the Mississippi River, the Texas Orthopaedic Association had its beginnings thirty years ago and was re-organized as a former organization with a new constitution and by-laws in 1934.

Membership in the Texas Orthopaedic Association is limited to men who have passed both sections of the American Board of Orthopaedic Surgery. At present there are 133 members of the Texas Orthopaedic Association in good standing.

The organization meets each year in conjunction with the Texas Medical Association and is devoted to the advancement of orthopaedic surgery in the State of Texas. It meets for one day and has a program consisting of formal papers and case presentations. The case presentations are rendered by the doctors in the local host city for the particular year. Annual meetings are of considerable value and an excellent program is put on each year. Dr. G. W. N. Eggers of Galveston, Professor of Orthopaedic Surgery at the University of Texas Medical Branch at Galveston, was program chairman for the Galveston meeting.

Baylor Graduate

The new president, Dr. Hinchey, received his B. A. in 1935 and his B. S. in 1936 from Texas Technological College. He was graduated from the Baylor University School of Medicine in 1940 and took a Fellowship in Orthopaedics at the Mayo Clinic, Rochester, Minnesota. He received his M. S. in orthopaedic surgery in 1946 from the University of Minnesota.

(Continued on page 373)



Photo Report on the

TEXAS ORTHOPAEDIC ASSOCIATION MEETING

Galveston, Texas, April 23

Held in conjunction with the 89th Annual Session of The Texas Medical Association



Members of the Texas Orthopaedic Association (left) met in the afternoon of their one-day meeting at Randall Hall in the University of Texas Medical Branch at Galveston, following a morning session in the Pelican Room of Crow's Restaurant and a luncheon and business meeting in the Flamingo Room in Crow's Restaurant. In the photo below are Dr. Rex L. Dively, principal speaker, who is Associate Professor of Orthopaedic Surgery at the University of Kansas School of Medicine in Kansas City, and the wives of two association members Mrs. David M. Cameron, El Paso, (right) and Mrs. Bruce M. Cameron, Houston. The Drs. Cameron are brothers. Below on the right is Dr. G. W. N. Eggers, Professor of Orthopaedic Surgery at the University of Texas Medical Branch at Galveston, who was program chairman for the meeting, and Dr. D. R. Swetland, Marlin, Texas. At bottom of the page are, left to right, Dr. D. C. McKeever, Houston, Dr. Paul R. Harrington, Houston, Dr. R. O. Whitson, Baytown, and Dr. Richard Eppright, Houston.











Above left are Dr. Paul C. Williams, Dallas, (right) retiring President of the Texas Orthopaedic Association, and Dr. David M. Cameron, El Paso. Above right are Dr. Margaret Watkins, Dallas, who was re-elected secretary-treasurer of the Texas Orthopaedic Association, and Dr. E. M. Cowart, Houston, president of the Association in 1949. Below left are Dr. Edward T. Smith, Houston, (left) and Dr. G. B. Stephenson, Beaumont. Below right are Dr. M. P. Knight, Dallas, (left) and Dr. Rex J. Howard, Fort Worth. Drs. Knight and Howard were speakers at the meeting.





Below left are (left to right) Dr. Henry C. McDonald, Fort Worth, Dr. L. L. Lankford, Dallas and Dr. M. V. Atchison, Harlingen. Below right are Dr. T. Wiley Hodges, Dallas, (left), one of the speakers, and Dr. Dorsey K. Barnes, Dallas.











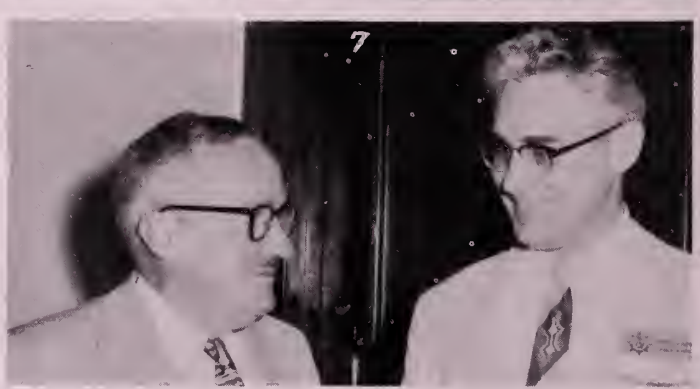
1. Dr. Bruce M. Cameron, Houston, one of the speakers, (left) and Dr. Arthur L. Glassman, Houston. 2. Left to right are John W. G. Powell and his wife, Dr. Janet Travell, Associate Professor in the Department of Clinical Pharmacology at Cornell University Medical College and one of the meeting's speakers, Dr. Johanna Blumel, who is with the Department of Orthopaedic Research at the University of Texas Medical Branch at Galveston, and Dr. Robert B. Elliott, Houston. 3. Dr. D. C. Hucherson (left) and Dr. B. F. Claussen, both of Houston. 4. Dr. George W. Horton, Odessa, (left) and Dr. W. H. Ainsworth, Galveston. 5. Dr. Ben L. Schoolfield, Dallas, (left to right) Dr. William M. Branch, Dallas, and Dr. Edward T. Driscoll, Midland. 6. Mrs. T. A. Klecka, San Antonio, wife of one of the members, (left) and Mrs. Estelle Greenwalt, secretary to Dr. G. W. N. Eggers. 7 Dr. P. M. Girard, Dallas, (left) and Dr. Clarence R. Martin, Houston. 8. Dr. D. J. Henry, Dallas, (left) and Dr. Ruth Jackson, Dallas. 9. Left to right are Dr. T. M. Anderson, Dallas, Dr. B. D. Burdeaux, Houston, and Dr. Kairyu Hasegawa, Houston.













74th ANNUAL MEETING OF THE

NEW MEXICO MEDICAL SOCIETY

In Roswell, New Mexico, May 2-4



Dr. Stuart W. Adler, of Albuquerque, N. M., (below) was elected President of the New Mexico Medical Society at its 74th annual meeting in Roswell, N. M., May 2-4. Other new officers are Dr. S. R. Ziegler, Espanola, N. M., President-Elect; Dr. James Sedgwick, Las Cruces, Vice-President; and Dr. Lewis Overton, Albuquerque, Secretary-Treasurer. Santa Fe was selected as the site for next year's convention.

Born in South Bend, Indiana, Dr. Adler received his Ph. B. from Lafayette College in Easton, Pa., and his M. D. from Harvard University School of Medicine. He interned and served his residence in Boston City Hospital and then did a tour of duty in Pediatrics at the Mayo Clinic. He practiced in Minnesota and Illinois before moving to New Mexico in 1933 to practice medicine in his specialty, Pediatrics.

Dr. Adler is a member of the American Academy of Pediatrics, a Fellow in the American Public Health Association, is certified by the American Board of Pediatrics, and is a past president of the Bernalillo County Medical Society. He is at present Medical Director and for 15 years has been active in the work of the Crippled Children's Service Program of the Department of Public Welfare in New Mexico. He is serving his third term on the board of the New Mexico State Hospital at Las Vegas.

Having recovered from chest surgery for cancer in March, 1955, Dr. Adler preaches the gospel of two X-rays of the chest a year for men over 40, "so others will be as fortunate as I was by sheer accident".

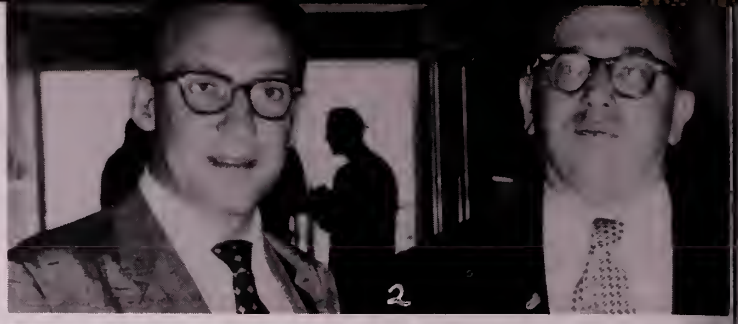
Standing before the coyote of the Roswell Senior High School, at the welcoming sign of the convention, are (left) Dr. Emmet M. Jennings, Roswell, and Dr. C. Pardue Bunch, Artesia.



Left to right at the registration desk are Dr. A. J. Jenson, Hobbs, Mrs. W. N. Worthington, Roswell, Mrs. F. R. Brown, Roswell, chairman of the registration committee, and Mrs. Earl A. Latimer, Jr., Roswell.









1. Dr. and Mrs. Forrest H. Adams of Los Angeles and son Judd get a taste of Roswell sunshine beside the swimming pool at their motel. Dr. Adams, Associate Professor of Pediatrics at the University of California at the Los Angeles School of Medicine, was one of the guest speakers. 2. Dr. S. R. Ziegler, Espanola, (left) President-Elect, and Dr. A. E. Margulis, Santa Fe. 3. Dr. J. C. Sedgwick, Las Cruces, (right) Vice-President, and Jimmy Smith, Lubbock, A. H. Robins Co. representative. 4. Dr. Gerald A. Slusser, Artesia, (right) new member of the State Grievance Committee, and A. J. Stenseth, Albuquerque, Esco Bio-Chemicals Co.

5. Dr. Dana M. Street, (left) Chief of Orthopaedics at the Veterans Administration Hospital in Memphis and one of the speakers, and Captain Vernon E. Martens, Medical Corps of the U. S. Navy, Director of Laboratories and Chief Pathologist at the National Naval Medical Center at Bethesda, Maryland, who was also one of the speakers. 6. Dr. Ian Macdonald, Associate Professor of Surgery at the University of Southern California School of Medicine and one of the speakers, (right) and Dr. Quentin J. Florence, Roswell, Surgery Roundtable co-chairman. 7. Left to right are Dr. Steve Marshall, Roswell, Dr. John S. Moore, Roswell, Surgery Roundtable co-chairman, and Dr. Morris J. Fogelman, Associate Professor of Surgery at the Southwestern Medical School at Dallas and one of the speakers.













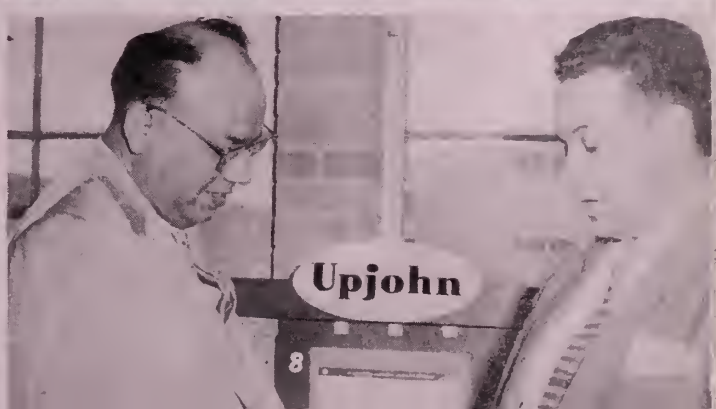




1. Beards were much in evidence at the meeting, in view of the fact that many of the physicians were from Albuquerque, which is celebrating its 250th anniversary July 4th-14th and which has some 2,000 citizens growing beards. Above Dr. Eugene Szerlip, Albuquerque, (left) and Dr. Jack Redman, Albuquerque, indulge in a little horseplay. 2. Dr. Orval I. Nesbit, Albuquerque, (left) and James C. Helke, Albuquerque, Pfizer Laboratories. 3. Left to right are Dr. W. N. Worthington, Roswell, Dr. E. W. Lander, Roswell, President of the Chaves County Medical Society, S. F. Hutson, El Paso, Southwestern Surgical Supply, and Dr. A. D. Maddox, Las Cruces. 4. Dr. D. D. Moore, Walker Air Force Base, W. E. Hamilton, Roswell, and E. W. Griffith, Oklahoma City, both of Eli Lilly & Co. 5. Left to right are Lyle Bartlett, Midland, Lederle Laboratories, Dr. Earl A. Latimer, Jr., Roswell, and Dr. I. J. Marshall, Roswell. 6. Left to right are H. B. Walton, Dallas, Eaton Laboratories, Tom McLaughlin, Albuquerque, also of Eaton, and Dr. F. R. Brown, Roswell. 7. Dr. Ralph H. Homan, El Paso, (left) and D. LeRoy Foster, Lubbock, Mead Johnson & Co. 8. Dr. J. A. Rivas, Belen, (left) and W. L. La Fortune, Albuquerque, Upjohn.









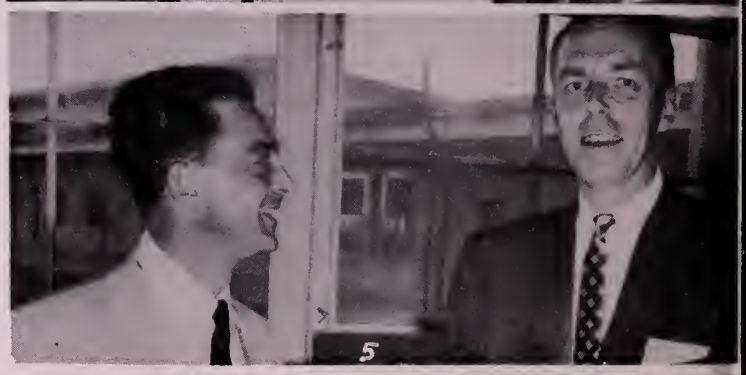


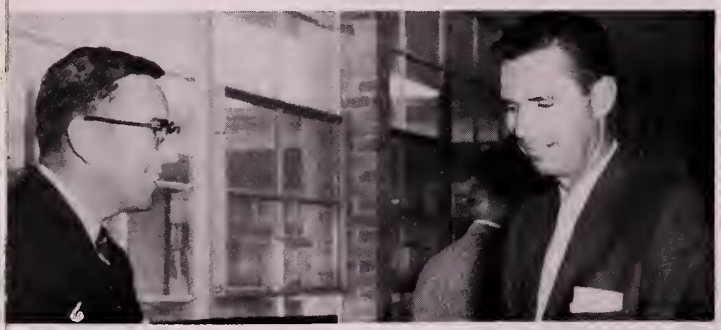


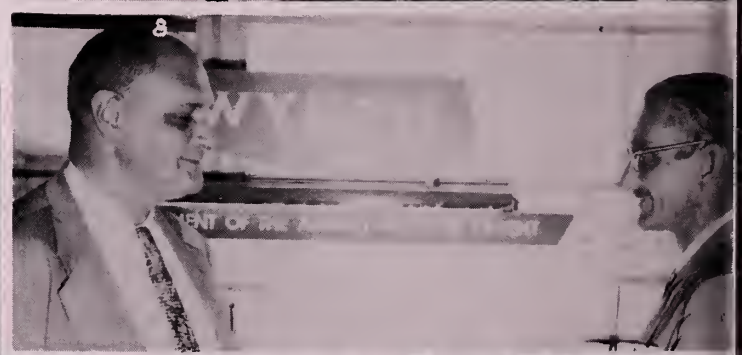


1. Left to right at the registration desk are Mrs. John J. Craven, Roswell, Mrs. H. O. Lehman, Portales, Mrs. Robert R. Boice, Roswell, and Mrs. E. M. Jennings, Roswell. 2. Bob Gregory, Albuquerque, Searle representative, and (left to right) Mrs. W. H. Peacock, Mrs. F. B. Nordstrom and Mrs. J. C. McCulloch, all of Farmington. 3. Dr. W. E. Badger, Hobbs, (left) and Dr. H. A. Fenner, Hobbs. 4. Dr. Donald H. Ewalt, El Paso, (right) and S. L. Owens, Parke, Davis & Company. 5. Dr. Manley B. Cohen, El Paso, (left) and A. E. Peterson, Ayerst Laboratories. 6. Dr. H. M. Gibson, El Paso, (right) and Jim Reed, Roswell, E. R. Squibb & Sons. 7. Dr. Louis L. Geary, Albuquerque, (right) and B. L. Spencer, Albuquerque, Ciba representative. 8. Dr. R. F. Crane, Portales, (left) and Pete Newquist, Albuquerque, Wyeth Laboratories. 9. Dr. Pierre Salmon, Roswell, (left) and Dr. Robert R. Boice, Roswell.

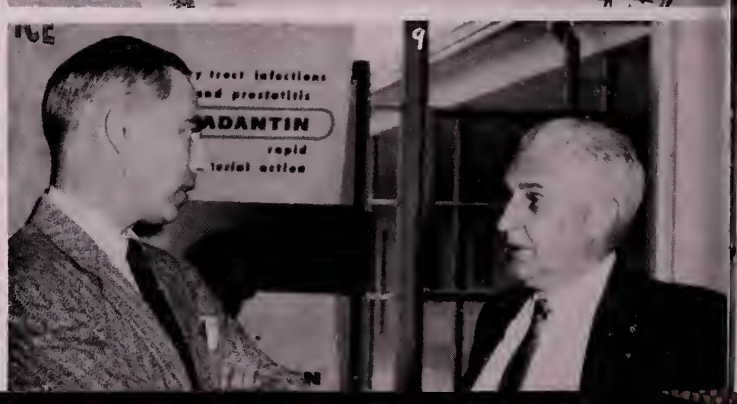












District One Physicians Active at Texas Medical Meeting

District One of the Texas Medical Association was represented at the annual state medical meeting in Galveston, April 21-25 by Dr. Charles E. Oswalt, Jr., councilor, Fort Stockton, and Dr. Russell Holt, El Paso, vice councilor. Representing El Paso County Medical Society were Dr. Russell L. Deter and Dr. Merle D. Thomas.

Scientific Papers

Scientific presentations were made by Dr. Louis W. Breck, El Paso, who spoke on "The Post-Polio Calcaneo-Valgus Foot"; Lt. Col. John P. Stapp, chief of the Aero Medical Field Laboratory at Holloman Air Development Center in New Mexico, who discussed "Air Force Crash Survival Research, Automotive and Aircraft"; Dr. W. W. Schuessler, El Paso, "Statistical Report on the Cleft Palate Problem"; Dr. Ralph S. Clayton, El Paso, who presented a paper on "Current Status of Treatment of Carcinoma of the Cervix", which was prepared by Drs. Mason, Boverie, Black and Clayton of El Paso.

Dr. Breck was named to the Council on Medical Defense for a five-year term and Dr. Thomas was elected a delegate to the American Society of Anesthesiologists in Kansas City this fall. Dr. Holt was elected second vice-president of the Texas Railway and Traumatic Surgical Association.

Provisional Membership

Provisional membership of 24 months and an indoctrination program on the state level were adopted by the Texas Medical Association House of Delegates after considerable discussion. A third proposal recommended by the Board of Councilors a year ago in efforts to strengthen county medical societies—compulsory attendance at society meetings—was rejected.

Encouragement of greater participation in affairs of the state organization came with enlargement of four standing committees, cancer, tuberculosis, mental health, and industrial health (this latter a newly formed standing committee), to ten members each and the opportunity of appointing up to nine members of reference committees instead of only seven as heretofore.

Similar Status

In addition to the new standing Committee on Industrial Health, similar status to permit continuity of effort was given to the Committee on National Emergency Medical Service, Committee for Liaison with Workmen's Compensation Insurance Companies, and Committee for Patient Care, which will replace the special Committee on Nursing Care and deal with other paramedical groups as well as nurses.

Preliminary approval to make standing committees of the Committees on School-Physician Relationships and on Rural Health and Doctor Distribution also was given. Further study to include preventive as well as punitive provisions was recommended before establishment of the Committee on Liaison with the State Bar as a standing committee.

Growing pains were reflected also in reports that current membership in the Texas Medical Association is 6,800 (including 53 Negroes who have joined since House action qualified them a year ago) with 7,700 anticipated before the end of the year and that membership in the Association probably will reach 16,300 by 1975.

Controversy Continues

Because of continued controversy over the merits of fluoridating public water supplies, approval of such measures was withheld and a decision reached to avoid further official consideration of this problem for the ensuing five years.

Completion of the doctor distribution survey in Texas was announced with the conclusion that there is no doctor shortage and even less maldistribution than many believed.

Individualism and free enterprise received resounding support in the adoption of resolutions (1) urging a comprehensive study of all aspects of social security (a statewide survey showed Texas doctors 10 to 1 against inclusion of physicians under social security), (2) opposing federal aid to medical education, (3) opposing additional state hospitals for cancer patients, (4) inquiring into policy on civil service employees' medical service, (5) encouraging use of Salk poliomyelitis vaccine through normal channels of distribution and administration, and (6) approval of the Bricker amendment.

Optician Licenses

Licensure of dispensing opticians was approved, but licensure of physical therapists and of nurse technicians trained in psychiatric nursing was disapproved.

An annual physical examination for each physician was recommended, and attention was called to the group disability insurance program sponsored by the Texas Medical Association which has been provided for all members as a hedge against accident or illness.

El Paso Hospital Administrator named to House of Delegates

Bill Burton, administrator of Southwestern General Hospital in El Paso, has been named an alternate to the House of Delegates of the American Hospital Association. Burton is one of two alternates from Texas named to the important policy-making group of the AHA.

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

April 19, 1956

Frederick P. Bornstein, M. D., Editor

Case No. A-584-55
Presentation of case by Dr. Saul B. Appel
History Presented by Dr. Nathan Kleban

A 65 year old married Latin-American shoe-shine man was admitted to this hospital for the second time because of chest pain.

Two hours before admission, while sitting in a chair, the patient suddenly experienced severe lower retro-sternal pain which persisted in intensity and did not radiate. The quality was not described. There was chilliness and sweating. Neither vomiting, cough, nor trauma preceded the onset of pain.

Cataract Operation

Twelve years before an operation had been performed in another hospital because of a cataract of the right eye. Two years later enucleation of the right eye was carried out in this hospital with a diagnosis of secondary glaucoma. Blood pressure was 140/88. Findings consistent with glaucoma were reported on examination of the right eye. The left pupil was miotic and fixed. There were no other unusual discoveries recorded. The Kahn test was negative; blood counts and urinalysis were within normal limits.

No History

Family and past history were non-contributory. There was no history of angina pectoris, known hypertension, or congestive heart failure.

Physical Examination

Temp. 98.6 Resp. 20 Pulse 108 P. P. 84/60

The patient complained of severe retro-sternal pain. He appeared to be in shock, was dyspneic, did not cough. State of nutrition was fair. The skin was cold and clammy. The right eye was absent. Corneal scarring and lenticular opacity were noted in the left eye. Distant breath sounds and crepitant rales were detected on auscultation of the lungs.

One examiner located the PMI in the 5th LICS in the MCL. Another described slight cardiomegaly. P2 was louder than A2. There were no murmurs, thrills, or arrhythmia. There was tenderness over both upper abdominal quadrants. Bowel sounds were normal. Liver, spleen, and kidneys were not felt. There was a one-plus pitting edema of the lower extremities.

Hospital Course

Meperidine 100 mg. was given in the emergency room, with some relief of the pain. He was given oxygen and levarterenol without reversal of the shock. A little more than an hour after arriving on the ward, the patient suddenly complained of left postero-lateral chest pain. Respirations ceased and heart sounds were inaudible. Intra-cardiac adrenalin and manual artificial respiration were of no avail.

Laboratory

Portable chest film: Pleural effusion of right hemithorax with slight shift of mediastinum to left.

Electrocardiogram: Diffuse S-T — T changes compatible with antero-inferior sub-endocardial ischemia.

X-ray Discussion
Dr. Charles C. McVaugh

We have a single portable A-P radiographic examination of the chest which reveals obliteration of the right chest, apparently due to fluid. This could be pleural effusion or fluid from some other source. The patient is slightly rotated in the film. However, there appears to be some displacement of the mediastinum to the left.

I get the impression that there is slight straightening of the left cardiac border. I cannot visualize the right cardiac border and cannot determine cardiac enlargement — the aortic shadow and cardiac border blend. With a massive pleural effusion, there may be some shift of the mediastinum.

There is apparently no atelectasis associated with this, inasmuch as there appears to be some shift of the mediastinum to the left with no elevation of the right hemidiaphragm.

Left Lung Clear

The left lung field appears to be clear, and so actually I believe we learn very little from this single examination of the patient except we have effusion or fluid in the right chest. Another cause of this could be hemorrhage.

We have a slight shift in the mediastinum, straightening of the left cardiac border, the significance of which I can't determine, as I can't visualize the entire cardiac shadow. There may be pericardial effusion associated with this; then, however, you would expect to see congestive failure in the left lung.

Dr. Saul B. Appel

This is a very short protocol. Dr. Bornstein excused this very brief case protocol by stating that very often the house staff, and certainly many of us, are

presented with a patient who is acutely ill and expires very quickly and who doesn't give you a chance to obtain all kinds of tests and the benefit of time to observe which way the wind is blowing.

The total duration of this illness, at least the acute phase of this illness, could not have been more than three to four hours; and therefore the house staff certainly didn't have much chance to make any refined diagnostic effort, and I think they should be commended for what they did obtain in this period of time.

Sitting In Chair

Now, this male is 65 and his illness apparently began while he was quietly sitting in a chair. I know he was quietly sitting in a chair because he was totally blind. He had been in Southwestern General Hospital 12 years ago, at which time his blood pressure was normal. He began to lose his eyesight at 47 and he was entirely blind in the left eye and was losing sight in the right eye, otherwise he had always been in good health. This man did not have hypertension —his blood pressure was 140/88 which was similar to the blood pressure recorded 12 years before, so we are presented with a patient with very little history, certainly nothing positive except blindness, and cataract with secondary glaucoma. I asked Dr. Britton what general diseases he would think about, if we just said here was a patient with a cataract.

Dr. Bloyce H. Britton

In this type of case, we cannot say it is aligned with any particular disease, other than we do know that diabetes, nephritis and certain other allied diseases produce change in the fluid which supplies the lens with nutrition.

Dr. Saul B. Appel

At any rate, the patient was clammy and cold, with a low blood pressure, relatively fast pulse, respiration 20, which may or may not have been the case, (so often we do not actually take the respiration of the patient, just put 20 if it looks normal) and temperature 98.6. On examination, there was a question whether the heart was slightly enlarged or not and the pulmonic second sounded louder than the aortic which is understandable with that low systemic blood pressure and small pulse pressure.

He was a little tender in both upper abdominal quadrants, but the bowel sounds were normal and no masses were felt. The one plus pitting edema of the lower extremities may or may not be significant.

Sedentary Patient

In one sense we can say that this patient was sedentary, since he was blind, so it is understandable that he should have stasis in the lower extremities. Both extremities were slightly edematous, which makes one eliminate the possibility of a unilateral phlebothrombosis.

On the other hand, with two static extremities, the chances of a phlebothrombosis are much greater, and as we all know, there are often no signs whatsoever in the lower extremities when a patient has phlebothrombosis and shoots a pulmonary embolism.

Substernal Pain

At any rate, he got a little relief from his pain which, as you remember, did not radiate. The pain was substernal in origin. He got oxygen, relieving the shock-like picture. The X-ray was made, revealing an effusion in the right chest and possible displacement of the heart and presumably the mediastinum to the left.

He suddenly complained of a left postero-lateral chest pain, and promptly expired. Intracardiac adrenalin and artificial respiration failed to arouse him. There is one other bit of evidence before I postulate what I think might be the cause. May I have the EKG, please?

No Tachycardia

There is no tachycardia as the rate is 90 here. The P-waves are not the type seen in pulmonary embolism, they are ordinary looking P-waves. The outstanding features are the S-T segment depression which you can see in Leads II and III. In Lead I the S-T was slightly lower. The S-T is elevated in AVR and slightly elevated in AVL and again depressed in AVF, also the V-4, V-5 and V-6.

These changes are not specific, they are very suggestive and in addition I might point out that there is a Q-wave in the left arm lead. It is not terribly deep but when associated with the S-T segment elevation and sharply inverted T-wave, it strongly suggests that there may be an area high up in the left lateral ventricular wall posteriorly of myocardial infarction.

Ischemic Process

Of course if we had had more time we would have made other records to see the sequence of changes, however, this cardiogram strongly suggests that there is an ischemic process in the region of the left lateral border and also inferiorly because it is present in AVF, so I would visualize it as lateral and posterior or inferior.

Whether or not this is truly a coronary picture only seen in this one lead we cannot be sure because sometimes you will see a picture like this in a patient with a vertical heart.

The most likely thing that I would think of would be coronary occlusion with myocardial infarction. There are some things here that would not occur in a routine coronary case, mainly the pleural effusion on the right, and the shift in the mediastinum apparently to the left, without a pneumothorax.

Other Findings

The other findings are quite typical — his sudden death and the failure of resuscitation. It is not unusual to see a patient die acutely with a severe coronary.

Pulmonary Embolus

The second thing one must think of is pulmonary embolus with or without infarction. A man of this age group who sits around most of the time is entitled to thrombosis and pulmonary embolism. However, here again, the finding of pleural effusion sticks out like a sore thumb. Of course he didn't spit up blood but of course within four hours one might not expect to see blood, and why would the heart suddenly shift over to the left?

I notice on the X-ray that the left hilar vessels and left lung did not appear to be very well vascularized and an embolus into the left pulmonary artery would shut off a significant amount of pulmonary blood flow and an embolus of that size would be enough to kill a man. However, how would we explain the effusion on the right, unless we assume that with acute cardiac failure he could suddenly develop this massive obscuration of the right chest, and that doesn't seem too likely.

Unlikely Disease

Now, intra-abdominal disease causing this picture also seems very unlikely. Of course, we are in this part of the country where conceivably an amoebic abscess could rupture through the diaphragm into the pericardium and produce a picture very much like this.

But then, how would we explain the severe left postero-lateral chest pain, unless of course such an incident precipitated in a 65 year old man coronary occlusion with death. However, the electrocardiogram does not suggest pericarditis at all. It is conceivable that you could see this non-specific picture — I do not like that diagnosis.

Next Question

The next question comes up, could he have had a dissecting aneurysm of the aorta? Well, he could have and it would explain a lot of these features, although there are several things against the dissecting aneurysm of the aorta; technically, one should say, dissection of the aorta with aneurysm, that makes more sense.

If he had a dissecting aneurysm it could have ruptured as it bulged down between the media and intima and adventitia; it could have bulged down and ruptured into the right hemithorax, producing this massive pleural effusion.

Combination

Also, it could have ruptured back into the pericardium and the combination of those two could have conceivably pushed the mediastinum over to the left, and as it was rupturing down and around, it would have caused an awful lot of pain and shock — shock not only from the pain, but also from the severe blood loss into the chest and mediastinum and with its compression of the heart.

One could visualize all sorts of abnormalities, specially if it dissected proximally back towards the base of the aorta and thereby narrowed the coronary ostia, producing a pattern of ischemia and then the final blow could have been rupture into the chest, giving him the left postero-lateral pain.

However, dissecting aneurysm is usually seen in patients with severe long-standing hypertension.

Age Group Right

The age group is right, but I think we have established that this man did not have hypertension of any degree. However, it could have occurred without hypertension; I am just saying that is one argument against it. Also, one usually thinks of a dissecting aneurysm as not producing much of a drop in blood pressure.

However, if this is a dissecting aneurysm with a sequence as I have outlined, then it is understandable that his blood pressure would have dropped.

One Reason

Now, one reason I think we should mention dissecting aneurysm again is because I am sure that many of them go unrecognized and are called coronaries and the patient is signed out as such because they aren't too frequent, at least not too frequently diagnosed, and apparently 90 per cent of them eventually end in sudden death, that is, within hours. Of the 10 per cent who survive, many die within the next few months to a year. So I think I will stick my neck out and vote for dissecting aneurysm with that sequence I have mentioned.

Dr. Joe C. Carter

With massive hydrothorax and without knowing whether it is blood or effusion occurring suddenly my explanation would be not a dissecting aneurysm, but a ruptured thoracic aneurysm. If there had been a pre-existing effusion for any length of time, I would suggest it was on the basis of pulmonary embolism.

Clinical Diagnosis: Coronary Thrombosis

Dr. Saul B. Appel's Diagnosis: Dissecting Aneurysm of the Aorta

Pathological Diagnosis: Arteriosclerotic Aneurysm of the Descending Aorta, Dissecting Type, with Rupture into Right Pleural Cavity

Pathological Discussion by Dr. Frederick P. Bornstein:

On autopsy we found a slender, elderly man. The external examination was not remarkable. As was

(Continued on page 373)

ORIGINAL ARTICLES

Clinical Differentiation of Primary and Secondary Thrombocytopenic Purpura

By Lee Ehrlich, M. D.,* Phoenix, and Steven O. Schwartz, M. D., Chicago

Thrombocytopenic purpura is usually and quite properly divided for clinical convenience into two groups: First, the primary or the essential group, and the secondary or the symptomatic variety. The former is the one most commonly encountered in clinical medicine and implies a primary disturbance of the spleen of unknown etiology.

In the secondary group, the splenomegaly is due to a well-defined cause, such as leukemia, Hodgkin's Disease, lymphosarcoma, Sarcoidosis, etc. The purpura in this secondary group, therefore, is thus only a symptomatic manifestation of another underlying disease causing thrombocytopenia by actual megakaryocytic destruction or by "hypersplenic" activity of a diseased spleen.

Role of Spleen

The role of the spleen as the sole incriminating factor in the pathogenesis of the disease has been postulated for these many years. The two foremost proponents of this viewpoint have been Dameshek[1] on one hand, and Doan and Wiseman[2] on the other. Both agree only in that the megakaryocytes are normal in number. Dameshek's concept is that the "spleen has an indirect or humoral action upon the bone marrow, either by preventing the growth or maturation. . . or else by blocking (platelet) delivery from the marrow."

The platelet production from these megakaryocytes is impaired and inadequate, this effect being mediated as a result of a hormone liberated within the spleen, thereupon promptly subsiding as a result of splenectomy. Doan and Wiseman, however, have produced evidence favoring a mechanical rather than the hormonal concept—that is, by way of selective sequestration and phagocytosis of the platelet within the spleen per se.

Emphasis Shifts

In the past four years, the emphasis has shifted from the spleen as the site of platelet destruction to that of the circulating plasma. It has been shown that when infusions of plasma from patients with thrombocytopenia are injected into normal recipients, a rapid and precipitous fall in platelet counts results and may persist for as long a period as two weeks.[3]

By the same token, normal platelets when transfused into thrombocytopenic patients disappear within a few hours. And this was true in some cases, regardless of whether splenectomy had or had not been performed. Recently, moreover, a series of experiments employing the Coombs anti-human globulin serum has revealed additional information involving this time, plasma auto-antibodies reportedly attached to red blood cells, similar to that seen in acquired hemolytic anemia.

Coexistence

It might be well to remember that the coexistence of thrombocytopenic purpura and acquired hemolytic anemia is not too infrequently seen. In addition, when one recalls the transient benefit of adrenocorticotrophic hormone or cortisone in the reduction of the bleeding tendency in thrombocytopenia, it is interesting to postulate that this may be the result of temporary "neutralization" of these aforementioned antibodies. So much for the pathogenesis of this disease.

Despite the seemingly decreased role of the spleen experimentally, the presence or absence of splenomegaly in thrombocytopenic purpura remains a point of disagreement in the literature. It is this point and its clinical and the prognostic ramifications of the existence of splenomegaly that I wish to emphasize.

Disagreement Exists

That disagreement does exist is only too clear. Wintrobe[4], for example, states that in idiopathic thrombocytopenic purpura, "the spleen is palpable in only about a third of the cases . . . (but) never extends more than one to two finger breadths below the costal margin." According to Fowler[5], "the spleen may be enlarged but this is not constant."

Minot[6] notes that "the spleen may be moderately enlarged particularly in the chronic type but abnormally small spleens are also reported." Kracke[7] states that "the spleen is not enlarged" and Doan and Wiseman[2] that "the spleen is never more than slightly increased in size and any case in which the spleen is easily palpated almost surely belongs to the symptomatic group." Castle's[8] opinion is that "rarely, the spleen is slightly enlarged." And so on.

136 Cases

With this in mind, 136 cases of thrombocytopenic purpura have been reviewed from the files of the Cook County Hospital in Chicago, and from the hospitals in the Phoenix area. The presence or ab-

(From the Hektoen Institute for Medical Research of the Cook County Hospital, Chicago, Illinois)
* Present address: Medical Center, Phoenix, Arizona.

sence of splenomegaly was verified by at least two observers and in most cases was confirmed at surgery or at autopsy. All cases in which the thrombocytopenia was secondary to marrow replacement were eliminated.

The following data, I believe, will corroborate the fact that the palpably enlarged spleen associated with thrombocytopenic purpura is almost invariably indicative of the secondary or symptomatic form—for in these 136 cases, the spleen was palpably enlarged in only 13 instances—and in 12 of these, pathologic sections of the spleen revealed such entities as Sarcoidosis, lymphosarcoma, Hodgkin's Disease, Gaucher's Disease, and so on.

One Instance

In only one instance in which the spleen was palpable, therefore, were the histologic sections compatible with primary thrombocytopenic purpura—and this in a 14 year old boy who, oddly enough, presented the smallest spleen in the series, that is, 210 grams. (Case 13-Chart I)

Splenectomy was performed in 11 of these 13 cases with significant post-operative elevation of the platelet count and cessation of bleeding occurring in every instance, and with permanent recovery in seven instances. Four cases expired post-operatively, one of pulmonary embolism, two having been poor surgical risks, and one ten weeks later as a result of Hodgkin's Disease. The two patients who were not subjected to splenectomy recovered spontaneously following bouts of infectious mononucleosis and infectious hepatitis. The average weight of the spleens in the secondary cases was 770 grams while in the primary cases, the average weight was 160 grams. Chart I presents an analysis of the cases in which the spleen was palpably enlarged.

SUMMARY:

1. One hundred and thirty-six cases of thrombocytopenic purpura were studied to determine the incidence of splenomegaly in this disease.
2. Thirteen palpable spleens were found; 12 of the 13 palpable spleens revealed primary or secondary pathologic changes. Only one instance of "primary" thrombocytopenic purpura was encountered in which the spleen was palpable.
3. Splenectomy is as effective therapeutically in secondary as it is in primary thrombocytopenic purpura.
4. Leukopenia is almost a constant finding in secondary thrombocytopenic purpura.
5. The presence of a palpably enlarged spleen in thrombocytopenic purpura practically rules out the primary type.

Bibliography

1. Dameshek, W. & Miller, E. B.: The Megakaryocytes in Idiopathic Thrombocytopenic Purpura, A Form of Hypersplenism, Blood 1, 27, 1946; Dameshek, W.: Hypersplenism, Bull, N. Y. Acad. Med. 31: 115, 1955.

(Continued on page 373)

Chart 1.—Summary of Clinical and Hematologic Observations in 13 Cases of Thrombocytopenic Purpura in Which the Spleen Was Palpably Enlarged

				Thrombocytes				Spleen Size			
Case No.	Sex and Color	Age	Duration of Purpura	Preoperatively	Postoperatively	WBC	Segmented Cells %	Palpable	Weight in gm.	Diagnosis	Remarks
1	W/F	67	2 mon.	15,120	366,100	4,250	70	15 cm.	1,071	Gaucher' Disease	Splenectomy with recovery
2	W/F	20	3 days	32,000	264,000*	5,450	42	3 cm.		Infectious Mononucleosis	Spontaneous recovery, Splenomegaly subsided
3	W/F	20	None	70,000	250,000*	4,500	30	5 cm.		Infectious Mononucleosis with Infectious Hepatitis	Spontaneous recovery, Splenomegaly subsided
4	W/F	16	1 mon.	15,000	1,008,000	5,350	78	3 cm.	507	Sarcoidosis	Splenectomy with recovery
5	W/M	70	7 mon.	27,900	571,200	8,800	50	4 cm.	650	Lymphosarcoma	Sudden death 5 days postoperatively
6	W/F	64	None	14,000	"Normal"	2,300	58	To Iliac Crest	800	Congestive Splenomegaly	Splenectomy with recovery
7	W/F	48	1 day	32,100	788,200	4,000	67	8 cm.	1,500	Laennec's Cirrhosis	Expired 6 days postsplenectomy
8	W/F	51	6 mon.	0	361,000	5,850	90	5 cm.	580	Laennec's Cirrhosis	Splenectomy with recovery
9	W/F	67	6 yrs.	23,000	135,660	800	27	"Enlarged"	320	Laennec's Cirrhosis	Expired 12 hours postsplenectomy
10	W/F	23	16 yrs.	74,000	342,000	4,500	65	6 cm.	475	Congestive Splenomegaly	Splenectomy with recovery
11	W/F	25	None	76,000	496,800	3,250	69	7 cm.	578	Hemolytic Anemia	Splenectomy with recovery
12	W/M	31	3 mon.	0-48,000	137,900	1,100	72	6 cm.	1,235	Hodgkin's Disease	Expired 10 weeks postsplenectomy
13	W/M	14	1 mon.	61,000	198,000	8,100	43	3 cm.	210	"Splenic Hyperplasia"	Splenectomy with recovery

* Post-recovery Figures

Observations on Depression and Psychosomatic Medicine

By J. Edward Stern, M. D., El Paso

Depression

When a specific, or relatively specific, remedy becomes available for a disorder, the recognition of that disorder becomes a matter of urgency. The developments of the past twenty years place depression in this category. The syndrome of depression is very common and, as will be seen, has protean manifestations.

Definition

Depression is an emotional state which, in relatively mild, brief form is experienced by almost everyone; it is not disabling. Depression which is more intense and more persistent is more or less disabling. The word is used to designate a *symptom* which occurs in a variety of physical and emotional disorders and to identify a *disease* or group of diseases.

Characteristics of Depression

The recognition of depression is often difficult and always important. It is difficult because it is frequently masked. It is important because it involves suffering, often intense, and the risk of suicide. Current treatment is almost specific for its prompt relief although not for its cure.

The important characteristics of depression are: lowering or sadness of mood; slowing of the thought processes; reduction of motor activity. In other words, mood, thought, and motor activity go hand in hand in a downward direction. There are mixed forms of depression in which the three components do not run parallel. The most important of these is the group termed agitated depression in which motor overactivity is combined with depression of mood and of thought.

Etiology

The etiology of depression is usually obscure; occasionally it is obvious. Students of this problem have, as usual, invoked heredity, metabolic disturbances, endocrine disorders, and exogenous or external factors which may range from trivial to serious. Post-partum depression is not rare and, among infectious processes, post-influenzal depression has been known to the internist for many years.

The last type is interesting in that it is usually brief, lasting about one month, and may occur in children as young as twelve or thirteen. Agitated depression or involutional melancholia has, as already mentioned, special features and may, belying the title, occur in the twenties or thirties. The sexes are about equally affected.

Depressed patients have traits of personality which include: meticulousness, hypersensitivity, industriousness, and a narrow range of interests. The loss of near relatives and financial reverses appear to have a special impact on these persons.

Precipitating Causes

The precipitating causes of depression seem to run a gamut from slight insults to serious losses and to serious handicaps like that of homosexuality.

The psychoanalytic formulation of depression is involved. It includes the concepts of hypertrophied superego, oral incorporation, ambivalent feelings of love and hate, and excessive guilt. It proposes that the object which is loved is also, and unconsciously, hated; this hatred generates excessive guilt feelings. The theory infers that loss of the loved (and hated) object leads, in fantasy, to an oral incorporation of the object; this leads, in turn, to punishment by the superego portion of the personality of the incorporated object and of its incorporator, the patient.

Classification of Depression

Modern students of psychiatry have criticized psychiatric classification as spurious. Until valid etiologic understanding occurs, an understanding which is partially present in the case of organic mental syndromes, this criticism is valid. Often classification is purely descriptive of syndromes; sometimes it sinks to the mention of a symptom or two. In spite of this there is some value in reviewing a classical grouping of depression and then, in the light of current therapy, a perhaps more practical one.

Classical Grouping of Depression

Clinically, depressions may be classified according to the intensity as mild, moderate, or severe. The mild or simple type has one or more psychosomatic symptoms. The moderate or acute type has allopsychic concepts of unreality, autopsychic delusions of guilt, sin, and poverty, and psychosomatic symptoms. The severe or stuporous type is characterized by a preoccupation with thoughts of death.

In all of these groups important features include: sadness and depression as expressed in facies, posture, and trend of thought as expressed in speech; slowness and difficulty of thought; motor retardation of movement and speech. Other symptoms include: self-accusatory delusions of great sin or guilt; hypochondriacal or somatic delusions; neurasthenic symptoms; irritability; apprehension; insomnia; anorexia; and weight loss. A rather common complaint is that food has lost its savor. Insight is often fairly well preserved but reasoning alone is not a remedy.

Manic-Depressive Psychosis

The standard classification of depression is incomplete unless one takes into account manic-depressive psychosis and mania. The manic state may oc-

casionally, and erratically, cover the underlying condition of depression. It is characterized by an elated although unstable mood; by flight of ideas; and by motor overactivity. It is graded into hypomania; acute mania; Bell's delirious mania, usually fatal; and Schott's chronic mania.

Other combinations are those of recurrent depression; recurrent mania; alternating states of mania and depression; and mixed states. Of these, recurrent mania and alternating states are relatively rare.

Agitated Depression

The most important mixed state is that of agitated depression or involutional melancholia which has already been mentioned. This is a common disorder which may begin in the twenties or thirties. It may be said in passing that if, in the course of this disease, a young woman develops amenorrhea, it is as a result of the disease, not an indication of the menopause.

The disorder is characterized by depression of the mood without motor depression or, indeed, with motor overactivity; by feelings of apprehension or anxiety; by feelings of unreality; by unjustified feelings of self-accusation and self-depreciation; by delusions relating to the outside world, to the patient's personality, and to his body. Extremely important for the physician are the psychosomatic symptoms which may easily mask all the others. Some of these symptoms will be discussed later.

Another Category

Many students of the subject believe that use of the term agitated depression should be reserved for patients who have not had previous attacks of emotional disorder; if the condition recurs, it should then logically be placed in another category, for example, in that of manic-depressive depression.

The differential diagnosis includes: manic-depressive psychosis, anxiety neurosis with depressive symptoms, schizophrenic states with depressive symptoms, and organic disease of the brain.

One of the most interesting and confusing problems depends on the fact that depressive symptoms may be superimposed on organic disease of any kind, including organic brain disease. Even under these conditions, however, the depressive state can sometimes be treated with a measure of success.

A Proposed Classification

In the light of modern therapies another sort of classification may have more practical value. Only occasionally does a patient first present himself to the physician in an obvious state of depression perhaps vaguely masked by flurries of giggling, forced smiling, or excitement.

Usually the symptoms are much more subtle; they are phychosomatic; they may be multiple or, more confusing, single. Despite an old aphorism, a psychosomatic disorder may be monosymptomatic.

After obtaining the history, the medical examination, the neurological examination, and a reasonable, but not excessive, amount of laboratory work, the physician should see the patient again, alone or with a relative.

Crucial Session

This session is crucial to the diagnosis and pointed questions may be put in a matter-of-fact way:

> Have you suffered a great grief or loss?
> Do you feel sad or depressed?
> Do you cry at times?
> Do you feel that life is not worth living?
> Have you thought of harming yourself?
> How much weight have you lost?
> Why do you have so much difficulty with eating?

Finally, in addition to the physical disabilities which he has uncovered, the physician will try to classify the depression as: neurotic depression or anxiety reaction with depression and good insight; as psychotic depression with relatively little insight; as reactive depression in response to a severe misfortune; as agitated depression which is common; as manic-depressive depression which is less common; as depression in the course of an organic mental syndrome (with cerebral arteriosclerosis, syphilis, or tumor); as depression with schizophrenic, usually paranoid, coloring.

This type of classification is useful in mapping out the initial efforts at treatment and at prognosis. Unfortunately, one is sometimes called upon to weigh the importance of depression *as a symptom* and to determine which carries the greater risk to the patient, the symptom-complex from which he suffers or the treatment which is available.

Treatment

Current methods of treatment are relatively satisfactory in terms of affording symptomatic relief in a short period of time. The physician cannot be too conservative about the use of drastic therapy, electroshock therapy. The patient's physical status must be weighed carefully and the risks of treatment: temporary mental confusion, fracture, and vascular accidents should be explained to the patient or, preferably, to his family.

If it seems that the diagnosis is that of a neurotic depression with preservation of insight, then the patient should be treated by means of interviews and simple medications such as Dexedrine, chlorpromazine, barbiturates, and so on.

Electroshock

If such methods fail or if the case is unsuitable, a course of electroshock treatment may be undertaken. In many instances, the patient may be treated on an ambulatory basis. Exceptions to this are those circumstances in which there are no responsible relatives

at home, cases in which the home is at a great distance, and cases in which the patient is too disturbed.

The risk of suicide must be explained to the responsible relatives. If the patient is treated in the hospital obvious precautions will be taken as regards protection, rest, nutrition, diversion, and exercise mostly in the form of walking. The need for baths and hydrotherapy has practically disappeared, disturbed patients become tractable in three or four days, and most, if not all, can be treated in a general hospital which has a few seclusion rooms.

Suicide Hazard

As regards suicide, the hazard is greatest early in the disease and early in the phase of recovery.

Nowadays even bad risk cases, including those with cardiovascular and bone disorders, may be treated with the electric current by means of a special technique which involves the use of a fast-acting barbiturate, a brief-acting muscle relaxant and the administration of oxygen by the positive pressure apparatus.

Irrelevant to a general discussion are the characteristics of therapeutic electric currents and the routine use of small doses of relaxant in standard risk cases.

No Certain Methods

There are no certain methods by which to predict the outcome of electroshock therapy. The cases of uncomplicated depression have the best outlook; approximately 80 to 90 per cent of these patients will experience a remission of symptoms in two to four weeks.

Following this, psychotherapeutic interviews and, if necessary, an occasional, "maintenance dose" of the electric current will, in most cases, insure a durable remission. Every effort must be made to modify etiologic factors in the patient, his environment or both.

Work has been done along pharmacologic lines to identify the patients who will respond favorably to electroshock therapy. Funkenstein uses mecholyl and epinephrin, studying their effect on the pulse rate and arterial blood pressure of recumbent subjects.

Seven Groups

He classified them into seven groups. Groups arbitrarily called six and seven are believed to have a good prognosis; they show a marked rise of pulse rate and pressure in response to epinephrine, a marked fall in response to mecholyl with or without a chill. Another favorable sign is the production or relief of anxiety by means of mecholyl.

The mode of action of electroshock therapy is not known. It may be that it acts on the endocrine system by way of the pituitary gland. It may act to disorganize cortical engrams, memory circuits, to reverse the clinical picture.

Electroshock therapy should never be regarded as an end in itself, only as a means to the end of reorganizing the patient in his life situation.

Psychosomatic Symptoms

The psychosomatic symptoms observed in the course of depression may literally run the gamut from head to foot. I have observed, to mention only a few, tension headache; delusions of a foul odor in the nose suggesting atrophic rhinitis (fetid ozena); delusion of a hole in the palate following tonsillectomy; sensation of heaviness in the chest simulating, to the patient, heart trouble; emphysema and asthma much aggravated by depression; anorexia, constipation, loss of weight suggesting the presence of malignancy; heaviness, aching, and weak sensations in the legs suggesting rheumatism or at least psychogenic rheumatism; general weakness and fatigability. The physician should be wary of attributing too much of a patient's symtomatology to low blood pressure or secondary anemia.

Another Group

Another group of symptoms is sometimes of interest, especially perhaps in patients with much anxiety in addition to depression. The first symptom in this sequence is sighing. This leads to hyperventilation which is usually characterized not by fullblown tetany but by lightheadedness and stiffness and tingling of the extremities. Accompanying this there may be aerophagia with abdominal distention, belching, and flatulence.

Complicated Case

One interesting and complicated case was the first one treated here by means of the electric current and the special precautions already described. It was that of an enfeebled man of 72 years who suffered from depression, insomnia, anorexia, weight loss, coronary and cerebral arteriosclerosis, severe arterial hypertension, a vertebral compression fracture, the last due to a fall which probably occurred as the result of a small stroke.

After the treatment, there was considerable improvement in the emotional state, appetite, ability to sleep, and body weight. The patient did not require barbiturates. He was treated medically for over two years when he suffered a stroke of moderate intensity which left him with hemiparesis. He is still alive; his mood is fairly good and he retains an interest in his old business activities.

Practically all of the treatment was carried out in a general hospital and in his doctor's office. He did not have to be confined to a psychiatric hospital. When first seen he was not only depressed but agitated and querulous; in fact, he appeared to be "wearing himself out."

Perhaps the treatment prolonged his life; perhaps it only helped to make him a bit more comfortable. In any case it seems to have been worthwhile.

Insulin Additives: Glucagon, Nitrogenous Substances, Metallic Elements, and Specific Pharmacodynamic Agents

By Theodore M. Feinblatt, M. D.,
and Edgar A. Ferguson, Jr., Chemist, Brooklyn, N. Y.

PART II

GLUCAGON (as an insulin additive)

By 1936[1] it became evident that there were vast clinical differences in at least two types of diabetes. This was related to the degree of insulin sensitivity[2]. One of the present authors was engaged in research directed toward a laboratory method of delineating the types of diabetes called "juvenile" and the type designated as "obese". Hinsworth of London[3] described a six-minute insulin sensitivity test which consisted of giving a 3 unit intravenous dose of insulin to the fasting subject and thereafter determining the blood sugar at 2, 4, and 6 minute intervals. The insulin-insensitive type (obese) diabetic usually had a flat blood sugar curve, or even a rising curve similar to a normal subject.

The insulin-sensitive type (juvenile) diabetic showed immediate drop in blood sugar. Unfortunately this work was not confirmed in this country (The United States) until 1954 when it was discovered that, due to a difference in the commercial method of extraction, the European insulin did not contain glucagon, a substance which is present in American commercial insulin products and which causes immediate elevation of the blood sugar after intravenous injection. The use of glucagon-free insulin extracts in the United States confirmed the results[3] which the pioneers in England had discovered in 1935.

Happy Event

This was an extremely happy event because almost 20 years ago our clinical observations[1, 2] dividing diabetics into "juvenile" and "obese" types were not confirmed by laboratory findings. While the clinical history and the general response of the diabetic to insulin treatment and diet constantly pointed out the two types it had been disappointing that for 20 years no laboratory or truly objective test could be found which confirmed these earlier observations.

The explanation offered, now that agreement as to results has been achieved, is that the "juvenile" diabetic has no intrinsic insulin response nor homeostatic mechanism. The dependence on extrinsic injected insulin being complete, the "juvenile" type therefore suffers from an "absolute" deficiency of insulin. Hence his straight-forward response to glucagon-free insulin, — that is, a blood sugar drop immediately following intravenous injection. On the other hand, the "obese" diabetic has some normal insulin production and an intact homeostatic mechanism similar to a normal individual.

Productive Capacity

This productive capacity may be overcome and overloaded by the recently isolated (from liver) anti-insulin factor (insulinase).[33] Thus, when glucagon-free insulin is intravenously injected in an "obese" diabetic, the normal response of a healthy individual predominates, — which is to overcome the excess insulin by producing a hyperglycemic response (homeostasis). This produces an unchanging blood sugar curve, or a rising blood sugar curve when the hyperglycemic response is excessive. This is the normal homeostatic phenomena.

Whether the "juvenile" diabetic started out in the same manner as the "obese" diabetic and later became "exhausted" either because high doses of

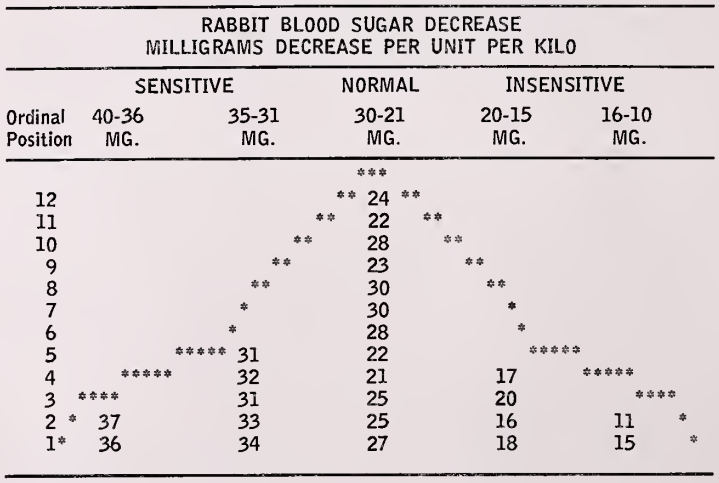


Figure 2

insulin "rested" the normal insulin-producing mechanism or whether constant hyperglycemia "wore out" the insulin resisting mechanism is speculative. However, these explanations are suggested by the differing responses of controlled diabetics in either classification when compared to uncontrolled diabetics.[4]

Mechanism

This mechanism was originally suggested by the response of diabetics to high carbohydrate diet showing improved insulin sensitivity by one of the authors in 1937[12] following the suggestions of others who had worked before the time of high insulin dosage.[13, 14, 15]

Therefore the so-called "improvement" in a controlled diabetic may be merely a glucose storage phenomena associated with improvement in the liver function of the controlled diabetic. Conversely the so-called "good result" of an "obese" diabetic becoming more insulin sensitive with dietary control may again be merely a glucose liver-depletion phenomena.[3,4]

This differentiation of mechanism does not change the observation that insulin sensitivity, whether measured by American-produced insulin or the European glucagon-free insulin, follows a normal distribution curve in reference to the number of individuals which are relatively sensitive and the number relatively insensitive in any group.

Thus it has been shown that in both human subjects[5] and in normal rabbits[6] approximately 25 per cent are extremely sensitive, 25 per cent were extremely insensitive, and the remainder clustered about the average. This is the typical bell-shaped normal distribution curve for any variable animal trait measured statistically. See Figure 2.

Average Insulin (American) (Subcutaneous) Effect

This is the normal distribution found in a control group of subcutaneously injected rabbits. About 50 per cent have a normal response of about 25 milligrams blood sugar decrease per rabbit unit per kilo, 25 per cent are sensitive, and 25 per cent are insensitive. (Average of 25 experiments)

Note: Adapted in part from, "Variability of Insulin Response in Standard Rabbits," by Feinblatt and Ferguson, reference 6.

A measure of the glucagon content of commercial insulin available in the United States can be made by noting the difference in time of response and degree of response when the subcutaneous route in rabbits is compared with intravenous administration of insulin. It is necessary to give 10 times the dose of glucagon-containing insulin by intravenous route to get the same response within a period of one-half hour as by subcutaneous injection and it is necessary to give three times the dose to achieve shock levels within one hour by the intravenous route as compared with subcutaneous route.

It is obvious that the glucagon content, which may be regarded as an insulin additive, causes a greater decrease of insulin response by intravenous administration than by subcutaneous administration. This is possibly because its effect is fleeting.[3]

This confirms the observation that very often, in

(Continued on Page 373)

INSULIN (AMERICAN) SUBCUTANEOUS COMPARED WITH INTRAVENOUS ADMINISTRATION

MILLIGRAMS DECREASE PER UNIT PER KILO RABBIT BLOOD SUGAR (FOLIN)

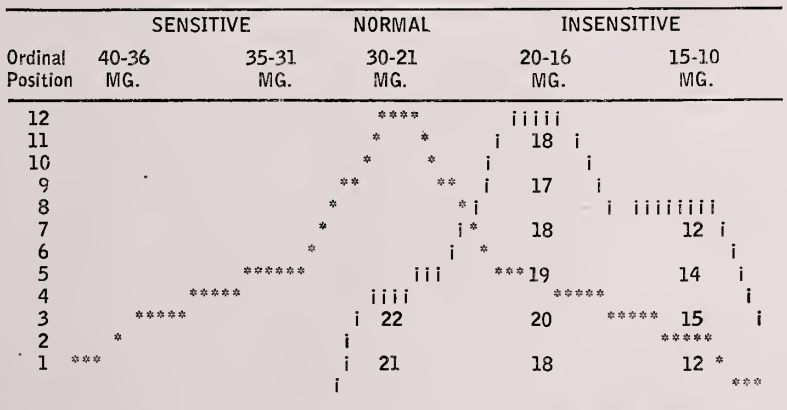


Figure 3

******* Normal rabbit response to American insulin (subcutaneous)
iiiiiii Normal rabbit response to the same dose of American insulin injected intravenously.

The apparent shift to a more insensitive response is due to the high glucagon content of the insulin used which is only apparent readily when the intravenous route of administration is used. (Average of 12 experiments)

Clinical Note On Postpartum Endocervicitis

By Joseph B. Raddin, M. D., Phoenix

The greatest single cause of pelvic distress in women, especially in those who have been pregnant one or more times, is endocervicitis. An abortion or miscarriage regularly causes as much cervical canal gland infection as a full term pregnancy and delivery. Young girls are also occasionally victims of endocervicitis but much less frequently.

Postpartum vaginal soreness and discharge commonly expected and called lochia is partly endometrial slough and partly drainage from the endocervicitis.

Rarely does complete cure of postpartum endocervicitis occur spontaneously without treatment to the cervix.

Pelvic Discomfort

Ninety per cent of women who have been mothers have various amounts of chronic cervical canal gland infection causing pelvic discomfort which may persist a lifetime if therapy is not instituted. The cervical erosion so frequently associated with endocervicitis when untreated for many years is generally conceded to predispose to carcinoma of the cervix.

As long as cervical canal gland infection persists there will be pelvic parametritis which causes distress with coitus and prevents a woman enjoying orgasm. Rejection of coitus is unavoidable. Marital unhappiness, frigidity and divorce commonly results.

Cause of Backache

Chronic endocervicitis is also the most common cause of backache in women. Because of the extension of the cervical inflammation, induration and edema to the round, broad and utero-sacral ligaments, pelvic, hip and low abdominal aches and pains are complaints. Most sacral bachache in women is due to involvement of the utero-sacral ligaments and not to sacro-iliac joint arthritis or vertebral pathology. Pelvic parametritis is an accurate description and diagnosis. Suspension of the uterus is obviously not curative because the endocervicitis is not treated. A "painful ovary" is often diagnosed rather than endocervicitis and parametritis and one or both ovaries may be needlessly removed.

Cautery Ineffective

Cautery of the cervical erosion is ineffective unless the endocervicitis is treated. The cervical canal need not be cauterized because of infection. Nor is hysterectomy, total or supravaginal, indicated. All too frequently supravaginal hysterectomy has been performed without any improvement in pelvic distress because the cervix is retained and the cervicitis is the real cause of the pain. In fact, the addition of the hormone imbalance subsequent to pelvic surgery regularly aggravates nervousness.

A sound suggestion to physicians doing obstetrics, proved by many years experience, is to include postpartum therapy to the cervix in addition to prenatal care and delivery. An additional charge can be made or included in an overall fee.

Postpartum Therapy

Routine postpartum therapy to the cervix can begin six to eight weeks following delivery. Using small gauze wipes, the cervical canal is wiped clean of discharge. Negetan (Lilly) is then applied freely, by means of a cotton tipped applicator, to the cervical canal and erosion, if present. Care should be taken to protect the vaginal mucous membrane with a piece of gauze to absorb any excess Negetan. A medicated vaginal tampon is then inserted and allowed to remain 24 hours. On removal an acetic acid (distilled vinegar) douche is prescribed. Three treatments weekly in the intervals between menstruation are given. Six to twelve tampon treatments are usually sufficient to restore the cervix to normal size and function, free of infection, edema and pelvic pain.

Summary

Postpartum therapy of endocervicitis should be part of routine obstetrical care. Virtually all postpartum vaginal and pelvic distress will be prevented and cured by the Negetan and medicated tampon treatments suggested.

Dr. Schlesinger to Speak in El Paso

Dr. R. Walter Schlesinger, Professor of Microbiology and Director of the Department at the Saint Louis University School of Medicine in Saint Louis, Missouri, will be the speaker at the regular meeting of the El Paso County Medical Society at its Turner Home, 1301 Montana Street, at 7:30 p.m. June 12.

A Fellow in the New York Academy of Medicine, Dr. Schlesinger received his M.D. from the University of Basel, Switzerland, Medical School, interned at Beekman Hospital in New York and the Stamford Hospital in Stamford, Conn., and from 1940 to 1946 was a Fellow, then Assistant in Pathology and Bacteriology, at the Rockefeller Institute for Medical Research in New York. He has served as Consultant to the Secretary of War on a mission to the Far East area for the Army Epidemiological Board, Associate Research Professor of Pathology and head of the Virus Research Laboratory at the University of Pittsburgh School of Medicine, and associate member of the Division of Infectious Diseases at the Public Health Research Institute of the City of New York.

Monthly Clinical . . . . .

(Continued from page 364)

to be expected, the main pathological findings were in the chest. After removing the sternum, a large hemorrhagic mass was visualized in the right pleural cavity, which was covered by the parietal pleura.

This mass measured 15 by 15 by 10 cm. and had pushed the right lung medially and forward, and had pushed the heart and left lung completely over to the left. Upon removing the organs of the chest, it was easily seen that the mass was connected with the descending aorta. The descending aorta had been transformed into a fusiform, saccular structure which extended from the level of the second intercostal artery to the diaphragm.

Numerous Ulcers

The intima showed numerous atheromatous ulcers and was covered with partially organized thrombotic material. Approximately at the level of the fourth intercostal artery posteriorly and to the right, a tear existed in the wall of the aorta which went through the intima and media.

This tear lead into a large hematoma contained by the thinned-out adventitia. This corresponded to the hematoma first noted when the right pleural cavity was opened.

In addition, the hematoma had dissected along the wall of the aorta, extending through the diaphragm to the level of the renal arteries.

Summary

In summary, then, we have a patient with an arteriosclerotic aneurysm of some duration which finally produced a dissection, followed by shock, mostly due to the rapid and considerable loss of blood. The dissection also explains the pain which was associated with this illness.

Insulin Additatives: . . . . .

(Continued from page 371)

cases of diabetic coma, high doses of insulin by intravenous route are followed by an immediate rise in blood sugar. This effect is not noted when the same amount of insulin is given by subcutaneous route.

A graph of subcutaneous compared with intravenous administration in rabbits is shown in Figure 3.

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Dr. Hinchey of . . . . .

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He is Associate Professor in Orthopaedic Surgery at the University of Texas Graduate School of Medicine in San Antonio, Assistant Professor in Orthopaedic Surgery at the Baylor Graduate School of Medicine, and is a Consultant at Brooke General Hospital in San Antonio.

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Dermatologists to Discuss Cosmetics at A. M. A. Meeting

The Committee on Cosmetics of the American Medical Association will sponsor a symposium at the 105th annual meeting of the American Medical Association in Chicago June 11-15, 1956. The symposium will be held at 3 p. m. Wednesday June 13 in the ballroom of the Knickerbocker Hotel.

This is the first time in the history of the Association that a program has been specifically planned to inform the physician on the significance of cosmetics in medical practice. This symposium was prompted by the Committee's recognition of the increasing psychologic, physiologic and economic importance of a healthy attractive skin and the close relationship between these aspects and the use of cosmetics.

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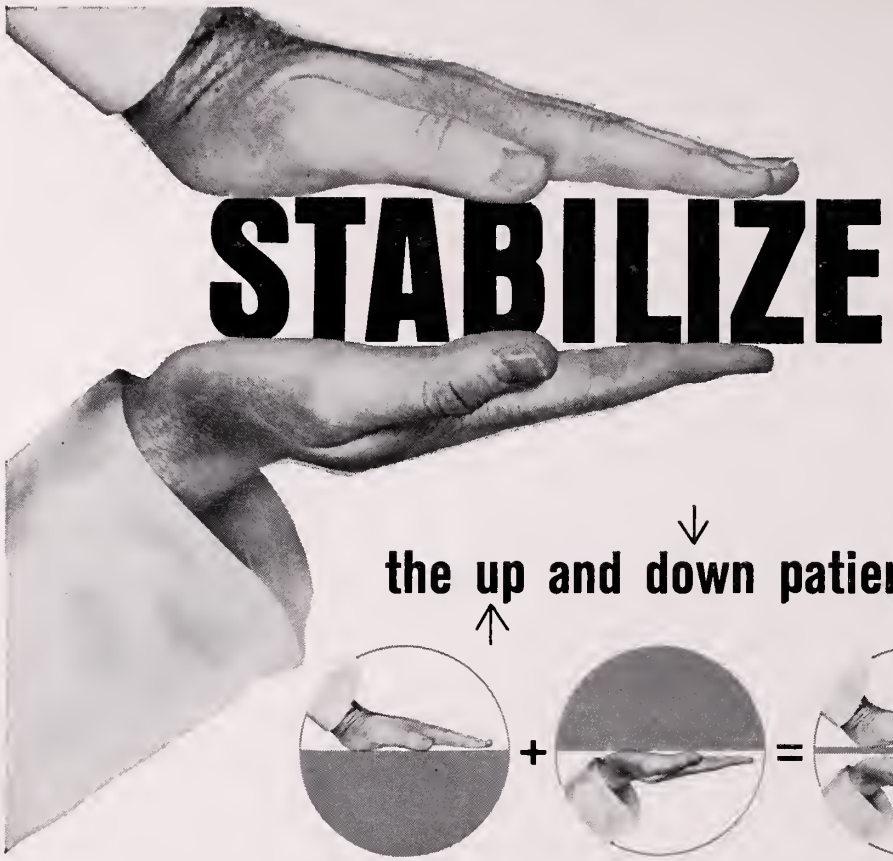
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1. Arnoff, B.: Personal communication. 2. Lazarte, J. A., and Petersen, M.C.: Personal communication.

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It is important to learn if the patient's sensation is continuous or paroxysmal.[2] Paroxysmal vertigo suggests specific conditions: Ménière's syndrome, cardiac disease and epilepsy. Continuous vertigo without a pattern may be due to severe anemia, posterior fossa tumor or eye muscle imbalance.

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1. Swartout, R., III, and Gunther, K.: "Dizziness:" Vertigo and Syncope, GP *8*:35 (Nov.) 1953.

2. DeWeese, D. D.: Symposium: Medical Management of Dizziness: The Importance of Accurate Diagnosis, Tr. Am. Acad. Ophth. *58*:694 (Sept.-Oct.) 1954.

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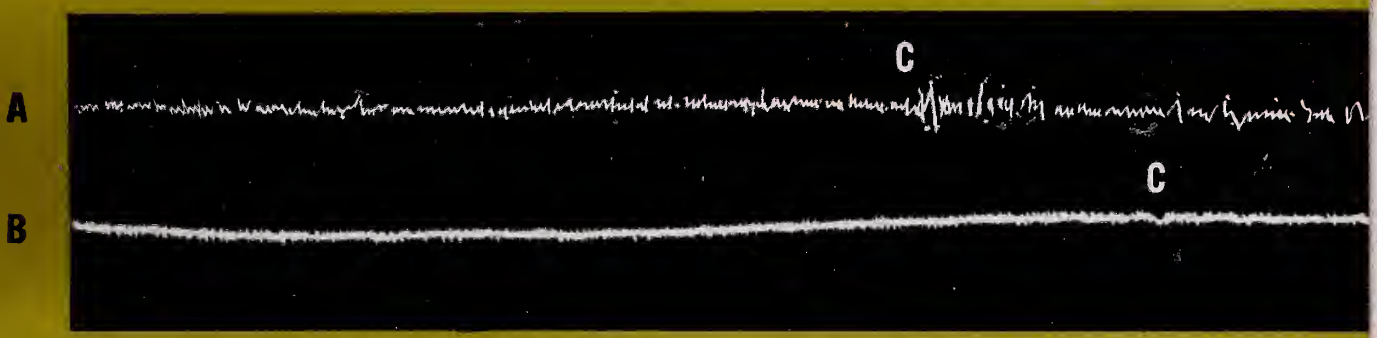
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1. Dickel, H.A., et al.: West. J. Surg., April, 1956.

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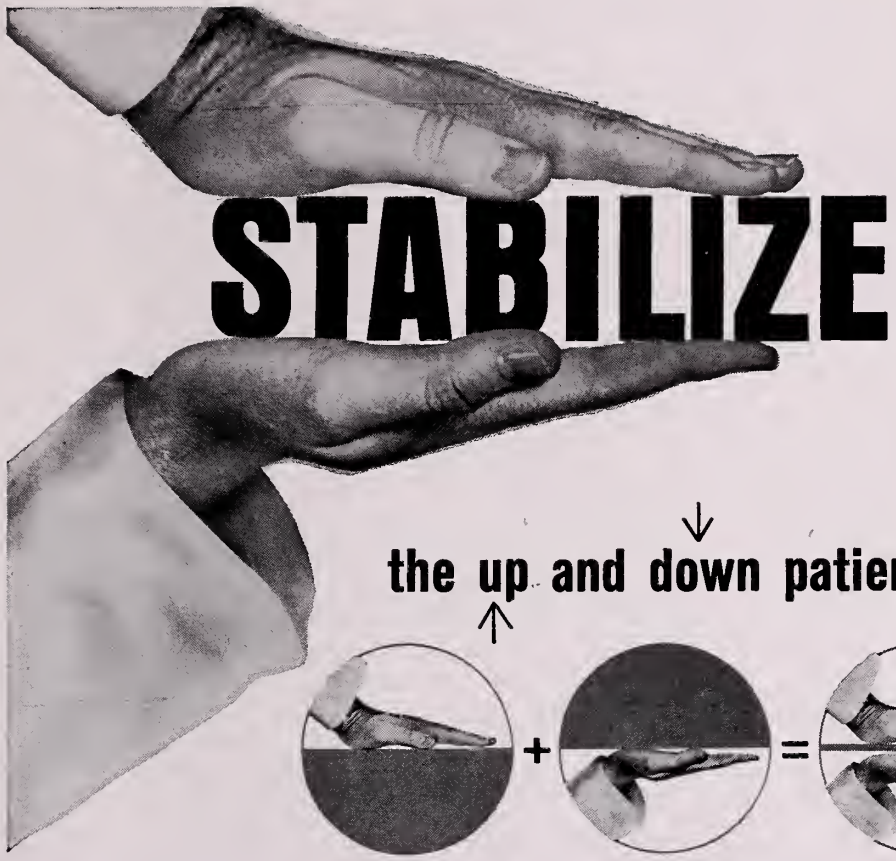
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1. Arnoff, B.: Personal communication. 2. Lazarte, J. A., and Petersen, M.C.: Personal communication.

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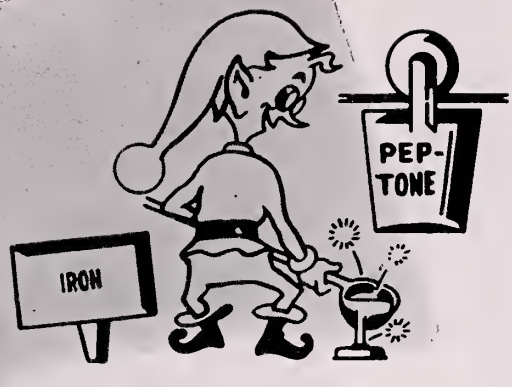
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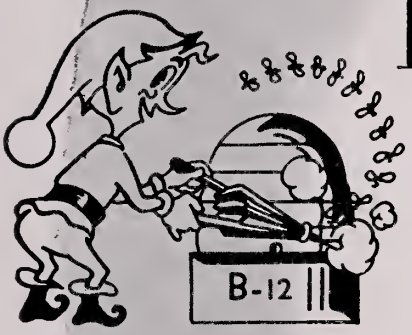
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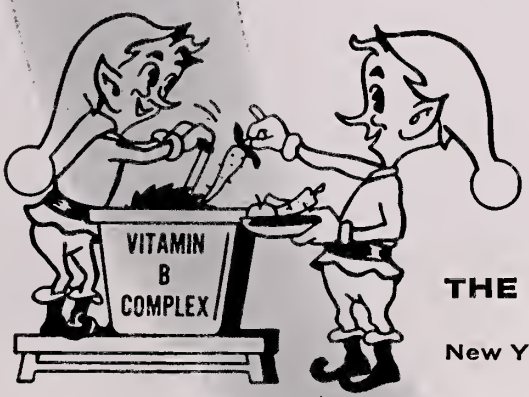


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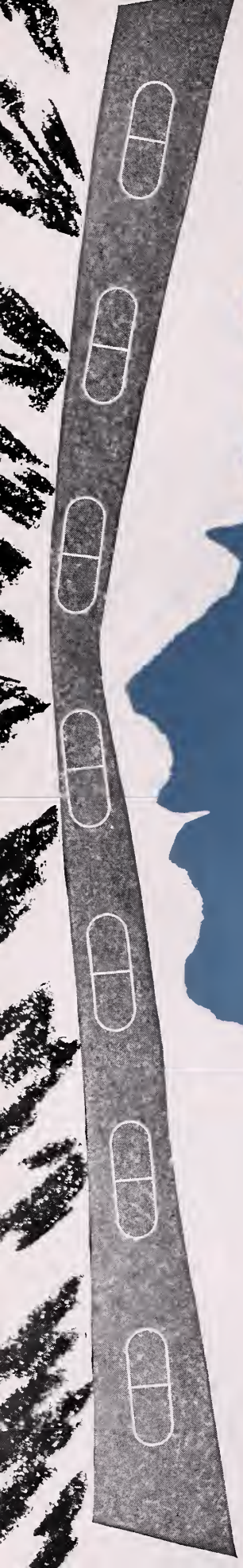


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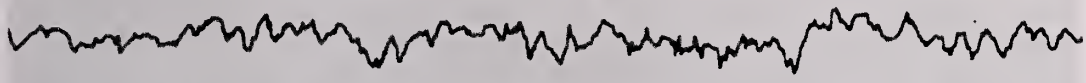
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Official Journal of

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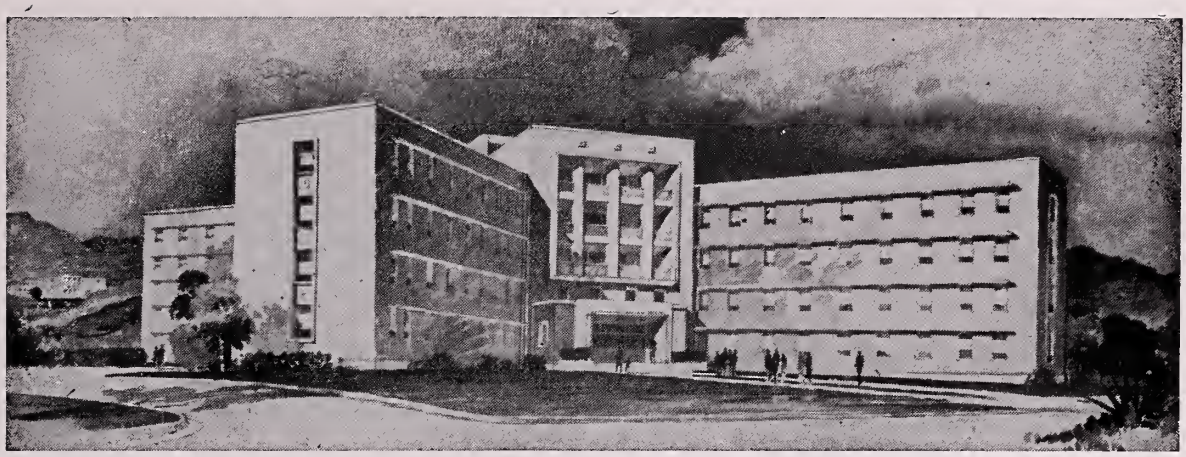
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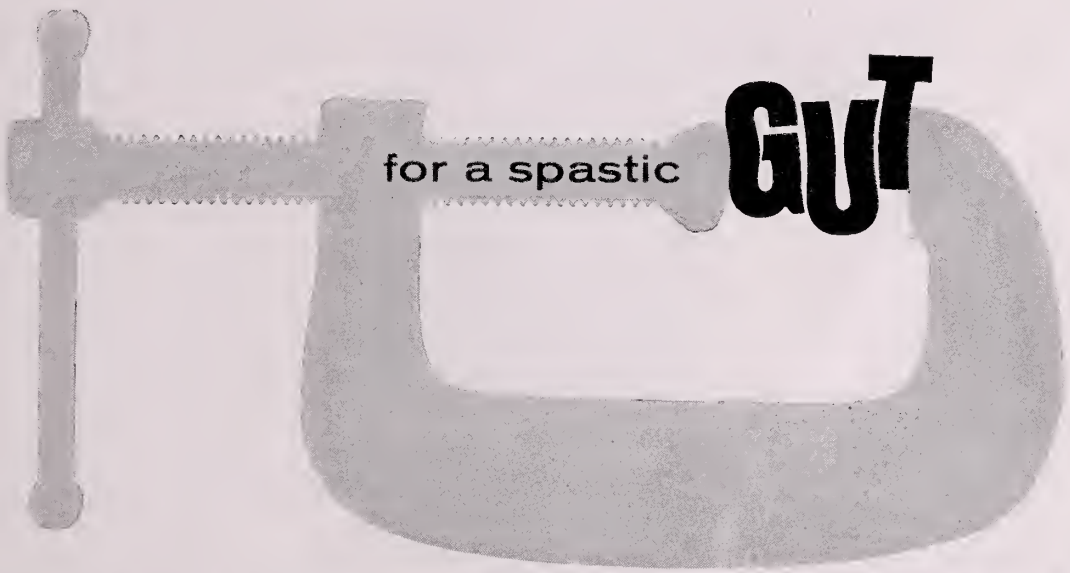
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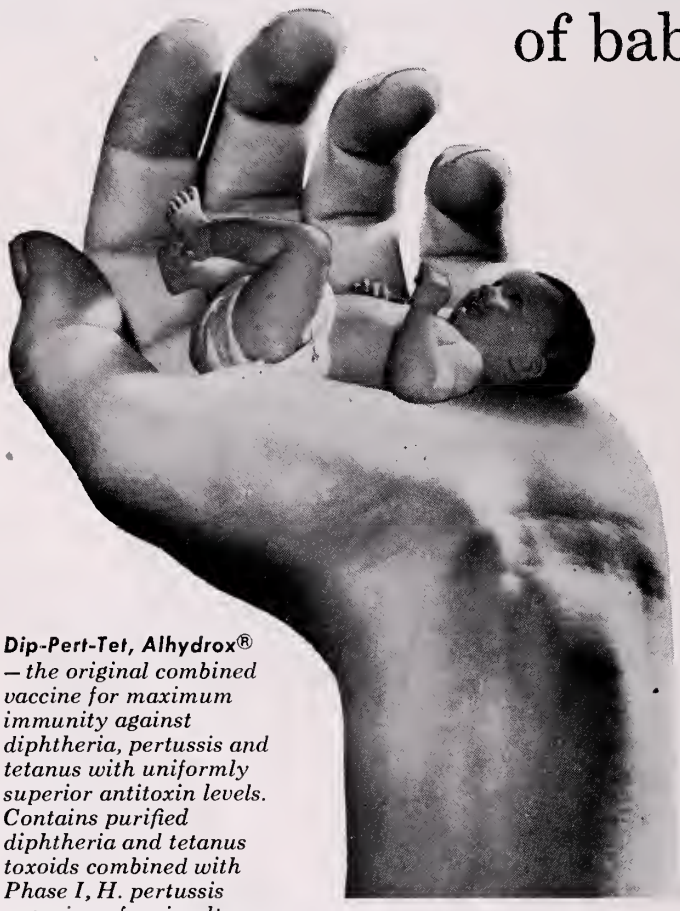
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VOL. XXXVII JULY, 1956 No. 7

CURRENT THERAPY

The Vasodilator Drugs

By Edward Egbert, M. D., El Paso*

In this, as in other fields of therapeutics, we as practicing physicians are bombarded by claims of superior effectiveness by the pharmaceutical houses for their products. We are anxious to prescribe the drug or drugs of choice, yet lacking the facilities both in quantity of clinical material and equipment it is sometimes impossible for us to do so objectively.

There are many favorable reports in the literature on the use of a single drug without comparing its effectiveness under the same circumstances with other available agents. This fault is particularly prevalent in papers relating to peripheral vasodilators. However, there have been a few fairly comprehensive papers, and it is from these that most of my comments are drawn.

Because the peripheral vasodilators are generally ineffective in coronary artery disease, and the coronary vasodilators are without effect in peripheral vascular diseases, the first step in considering these agents is to divide them into these two major groups.

Peripheral Vasodilators

Simply because a patient no longer complains of intermittent claudication or some other subjective symptom, is not sufficient reason to feel that he is getting the best response possible. There are instruments now used to measure objectively blood flow (oscillometer, plethysmograph, thermocouple, etc.), but some faulty conclusions have been often reported because of a lack of understanding the physiology of the vascular system.

Most of us have observed that nicotinic acid in an average therapeutic dose will cause a marked increase in blood flow to the face, which will give a very appreciable increase in the skin temperature of this "blush area" (skin of the face and neck), yet this same drug causes no increase in blood flow to the "glomus area", (just proximal to the nail beds) another site commonly used to record skin temperature changes.

Another Example

Another example would be Priscoline which increases the blood flow in the glomus area very remarkably, but affects no change in the blush area, and according to one investigator, actually produces a decrease in muscle blood flow. Therefore, because someone reports good vasodilative effect in one area, it does not hold that the drug is good for all peripheral vascular diseases.

Drugs with a primary site of action in the blush area include nicotinic acid, Roniacol and papaverine, in their order of effectiveness, and none have any remarkable effect at the glomus area or in increasing the potential blood flow in a given extremity. However, there is some reason to believe that there is correlation between the vasodilatation of the cerebral vessels and the capillaries of the blush area.

Same Effect

Hydergine, Priscoline, Ilidar, and Dibenzyline all have about the same degree of effect at the glomus site, and likewise have no effect on the blush area. However, they do show differences in their ability to increase muscle and/or potential blood flow. Arlidin yielded the greatest (200 per cent) increase in muscle blood flow among various drugs tested. Hexamethonium and Regitine caused some very spectacular changes in certain studies but are not generally recommended for these types of disorders.

From these studies it would appear that Illidar (25 - 75 mg., t.i.d.) and Arlidin (6 mg., t.i.d. to 32 mg., q.i.d., oral - 2.5 - 5.0 mg., q 4h i.m. parenteral) are clinically the most potent. Preparations most commonly used by intraarterial injection are histamine and Priscoline; the latter being preferable by slow continuous drip.

Space will not be taken to discuss the general management of the peripheral vascular diseases, but such principles as heat to the body rather than the affected extremity, position and exercise of this extremity, cleanliness, cessation of tobacco, and possible surgical intervention cannot be ignored for the patient to obtain optimum results.

Coronary Vasodilators

The coronary vasodilators lend themselves much more readily to clinical investigation, and have therefore been more adequately studied in comparing one drug to another. Again one cannot rely heavily on

* Dr. Egbert this month is substituting for Dr. Jack A. Bernard, regular conductor of this section.

apparent subjective improvement, but in this case there is a simple means of objective analysis, that being the standard Master's test, yielding essentially irrefutable electrocardiographic evidence. We are indebted to Russek and others who have studied all the drugs currently available and under the same circumstances, and have reported a really comparative study.

Nitroglycerine is by far the most effective coronary vasodilator and remains, after years, the drug of choice in relieving the acute anginal attack. However, its major drawback is its transient effect. Therefore what everyone interested in this problem seeks is a drug as effective as nitroglycerine with a prolonged action.

Disappointing Results

One immediately thinks of some type of timed release preparation of nitroglycerine itself — there is such a product now marketed under the name of Nitroglyn. Unfortunately, clinical and experimental evidence has been disappointing, even in doses as high as 9.6 mg., (4/25 gr.) in a single dose.

Papaverine has been a very useful drug in the management of coronary occlusions, particularly when given intramuscularly or intravenously. However, the effective oral dose is 200 - 500 mg., (more often the latter) and with a duration of effect of about two hours, and then successful only in about one third of the cases. Because of this, its expense, and the unfortunate designation as a narcotic by the Federal Government, have all been deterrants to its widespread use. Paveril, the synthetic analogue of papaverine, as studied in series with the Master's test does not demonstrate as much effectiveness as the drug it was designed to replace.

Metamine, a new trinitrate, leaves much to be desired being less potent than either Nitroglyn or Paveril.

Most Effective Drug

Finally Peritrate, which has proved, both clinically and experimentally, the most effective drug in this group. Russek feels that of the drugs currently available, Peritrate is the only one which can be termed a long acting coronary vasodilator. The usual dosage is 10 - 20 mg., q.i.d. It is of utmost importance that this medication be taken on an empty stomach, as ECG's taken two hours following a postprandial dose and standard exercise showed very little protection, whereas taken before the meal and then subjected to a Master's test gives the desired effect.

Some comment should be made concerning ethyl alcohol as a vasodilator. Generally speaking it is a fairly effective peripheral dilator; however, it has not favorably influenced the Master's tests, and even aggravating the ST depression as compared with the control tracing. The explanation is that its cortical effect raises the pain threshold so much that the patient does not receive the anginal warning to cease the activity. This does not mean that it has no place in the therapeutic armamentarium, but that the physician should not be led into a sense of false security because the patient no longer complains of chest pain.

Let me again emphasize that simply prescribing one of these coronary vasodilators, without due consideration of all of the factors cannot yield the maximum benefits.

Summary

In summary, the drugs of choice in peripheral vascular disease and in arteriosclerosis obliterans specifically, are Ilidar and Arlidin.

In coronary artery disease, nitroglycerine is unexcelled for the relief of the acute anginal attack, and Peritrate for the long term management. It must be remembered that these drugs are the ones which afforded the most patients the most relief; and that, if a given case does poorly on a given preparation, there is no reason not to try an alternate drug.

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3 — Samuel, S. and Tuchman, M.: Arteriosclerosis Obliterans, Angiology, 6:1; February 1955.

4 — Russeck, H. I. et al: Long Acting Coronary Vasodilator Drugs: Metamine, Paveril, Nitroglyn, and Peritrate, Circ., 12:169, August 1955.

GYNECOLOGY

Trends In Gynecology And Obstetrics

Sutton, P. E., J. Michigan M. S. 49:649, 1950

In this comprehensive review Sutton mentions the value of propionic acid in management of pruritus vulvae when the condition is not due to psychotic factors or mycotic infection. Sodium propionate may be applied two or three times daily as a 15 per cent ointment, utilized as a douche in 5 per cent solution, or employed as a vaginal cone containing 10 per cent active ingredient.

Clinical Clippings, October, 1950.

OBSTETRICS

Effects of Dexedrine Sulfate On Nausea And Vomiting Of Pregnancy

Anspaugh, R. D., Am. J. Obst. & Gynec. 60:888, 1950

Quite by accident the author found that Dexedrine sulfate relieved nausea and vomiting of pregnancy in one patient. Subsequently, of 165 patients who were placed on Dexedrine therapy, 148, or 90 per cent attained "complete and lasting relief." Patients were given 5 mg. Dexedrine one hour before breakfast for three days. If no undue nervousness was observed, an additional 5 mg. was given one hour before lunch. Some patients required a third dose during the late afternoon whereas for others, individual doses were reduced to 2.5 mg.

Clinical Clippings, December, 1950.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

By Andrew M. Babey, M. D., Las Cruces, N. M.

(Continued)

Middle-Lobe Bronchus

20. "The middle-lobe bronchus is peculiarly liable to occlusion from extrinsic pressure, because it is comparatively narrow and short, and because lymph-glands are so disposed around it that if they enlarge they will compress it like the jaws of a nutcracker." *The Lancet;* Dec. 10, 1955; p. 1236

21. "Heliotrope eyelids are suggestive of dermatomyositis." *The Lancet;* Dec. 17, 1955; p. 1280

22. "Dermatomyositis shares with scleroderma a distribution of lesions in skin, muscles, and heart. Calcinosis is common in both, but involvement of the pulmonary and alimentary systems is a feature only of scleroderma, and the early skin changes of dermatomyositis tend later to recede." *The Lancet;* Dec. 17, 1955; p. 1280

23. Differentiation of dermatomyositis from rheumatoid arthritis is usually easy: stiffness and contractures are common to both, but actual arthritis is rare in dermatomyositis." *The Lancet;* Dec. 17, 1955; p. 1280

24. "The largest group of the dissatisfied is met among the relatives of chronic or senile patients, who do not need any special treatment but only constant care and attention. The relatives appreciate how little treatment is needed and is being given in hospital and they know this would be inconvenient and would impose on them many distasteful tasks. To convince themselves, the patient, and the medical staff of their love and solicitude, they feel compelled to be perpetually dissatisfied and critical of the treatment and the wards in the hospital." *The Lancet;* Dec. 24, 1955; p. 1330

Guilty Relatives

25. "Another group of relatives who complain are those who feel that they are the cause of the patient's illness and that through their neglect or failure to summon medical help earlier, the patient became so ill as to need admission to hospital. Their feelings of guilt and frustration are expressed either as remorse or, taking a more active and outward form, as aggression towards the hospital authorities." *The Lancet;* Dec. 24, 1955; p. 1330

26. "But if remembering is a vital function, so also is forgetting. To forget is essential to sanity. Recalled in their entirety, the huge inchoate body of past events would suffocate our mental life." *The Lancet;* Dec. 24, 1955; p. 1332

27. "For some reason spider naevi in cirrhosis are rarely found below the nipple line except on the arms, and this characteristic distribution is difficult to explain on an endocrine basis." *British Med. Journal;* Dec. 21, 1955; p. 1607

28. "The site of cardiac pain is very variable: it may occur anywhere between the mouth and umbilicus, anteriorly or posteriorly, or in either arm." A. Morgan Jones; *loc. cit.;* p. 1613

29. "The technique of reassurance is important, for exaggerated or over-dogmatic statements will be discounted by an intelligent patient. His confidence will lie in the physician who himself believes and acts and talks at all times with a quiet confidence in ultimate recovery." Jones; *loc. cit.;* p. 1614

Patient Management

30. "All that I have seen of coronary disease has convinced me that the management of the patient is even more important than the treatment of the disease; there is often far more residual disability from fear than from myocardial damage—and it is largely within our power to prevent this." Jones; *loc. cit.;* p. 1615

31. "We have seen several hyperthyroid patients with abdominal pain simulating gall-bladder or liver disease, peptic ulcer or pancreatitis." Earl M. Chapman; and Farahe Maloof; *New Eng. Journal of Medicine;* January 5, 1956; p. 2

32. "Peripheral edema as a presenting complaint of hyperthyroidism has been seen in several patients. The mechanism is obscure." Chapman and Maloof; *loc. cit.;* p. 2

33. "Response of the ventricular rate to the usual dose of digitalis in patients with hyperthyroidism has been observed by us in a number of patients, especially those who are elderly and debilitated." Chapman and Maloof; *loc. cit.;* p. 2

34. "Demineralization may be severe, and fracture, with failure of the bone to heal, may be a presenting sign of hyperthyroidism." Chapman and Maloof; *loc. cit.;* p. 3

Muscle Weakness

35. "The myopathy of hyperthyroidism may create such muscle weakness that the patient has difficulty in walking. Two patients with myopathy were confined to wheel chairs until after their response to radioactive iodine. The onset of myasthemia may be so rapid as to simulate "periodic paralysis." Chapman and Maloof; *loc. cit.;* p. 3

36. "My comments reflect my search for reasons for the increasing breach between the layman and the physician, and the tragic paradox that this breach is widening at a time when physicians' power for accomplishment is higher than ever before in mechanistic therapeutics though perhaps never worse in the realm of personal relationships." William B. Bean; *Northwest Medicine:* Feb. 1956; p. 157

37. "Even if we succeed in wresting from Nature the secrets of cancer or arteriosclerosis man still must die, a fact generally overlooked." Bean; *loc. cit.:* p. 157

38. "In recent years we have seen postgraduate medical education nearly taken over by the siren song of advertising with illustrated brochures, wholesale distribution of samples of powerful drugs, and the ventriloquism of the detail man spouting his spiel like the barker at Madame Snakehair's sideshow. The detail man is a lineal descendent of the medicine man of pioneer days. Why does he come praising his brand of drug or placebo? His personal knowledge is obtained by brain bathing which leaves him to feed back echoes of what he was told. Motivated by sales not by salvation, he tells the physician how to treat everything; and leaves his trail warm with spoor-samples for the physician's unsuspecting family or the next handy patient." Bean; *loc. cit.;* p. 158

Worship of Science

39. "Worship of science has a very baleful effect on the frights and fears of an already highly neurotic population. That instrument of woe, the sphygmomanometer, links much of the populace in conspiracy with medical profession in a clinical numbers racket. Figures are bandied around with the glib assurance that they have some meaning in truth, rather than as the paraphernalia of an artificially engendered neurosis. We have a vast lay public, scientifically unequipped to comprehend or even guess the significance of the numbers and yet they may employ them as the skeleton of their framework of hypochondriasis." Bean; *loc. cit.;* p. 158

40. "The menopause has been built up from a minor oversight on Nature's part in not permitting child bearing to go on forever, to a real disease for which all kinds of powerful hormones are injected on the basis of scandalous lack of knowledge of what they may do or what, in fact, should be done." Bean; *loc. cit.:* p. 159

41. "The development of real safety in surgery has resulted in operations becoming diagnostic procedures. This is useful if it follows careful study, and is not substituted for it. It tempts a few unscrupulous surgeons to violate the human body, particularly the body of women, by stitching and anchoring tumbling wombs, removing the uterus entirely because of normal menstrual bleeding and inventing such spectacular harlequins as chronic appendicitis." Bean; *loc. cit.;* p. 159

Another Setback

42. "Another setback in medicine has been the decline in morality in medical insurance practices. The physician, winking at honesty, admits his patient to the hospital, not because he is sick, but because he is insured. Hospitals are crowded with people who feel they must collect from the insurance company to come out even. And the policy makers, dealers in small print, practice deceit after their immemorial custom. Such abuses merely hasten the day of state medicine." Bean; *loc. cit.;* p. 159

43. "A setback, not recent, but worse recently, is the growing monster of medical literature .... The flood of printing will ultimately drown medicine, and science with it." Bean; *loc. cit.;* p. 159

44. "I greatly lament the fact that medicine, particularly certain specialties, is now such a source of easy riches that the law of the market place, if not the law of the jungle, provides the incentive for the study of medicine in too many cases, with less of altruism or curiosity about the wonders and wisdom of the body." Bean; *loc. cit.;* p. 159

INTRAVENOUS PROCAINE—SURGERY

Intravenous Procaine: Influence In The Postoperative Period

Winter, L., Ann. Surg. 133:143, 1950

Postoperative administration of procaine by intravenous infusion produced satisfactory analgesia lasting 10 to 14 hours in the majority of 80 patients who had undergone various types of surgery. The agent was employed as a 0.5 per cent solution in normal saline and given in total amounts of 200 to 250 cc. over a period of two to two and one-half hours. Mild reactions, observed in some patients, were controlled by adjusting the rate of administration. Winter remarks: "The general condition of patients receiving intravenous procaine for postoperative analgesia was better than that of those treated with morphine."

Pozmany Peter U., Budapest

Clinical Clippings, October, 1950.

HEART DISEASE

Antidiuretic Action Of The Urine Of Patients In Cardiac Failure

Bercu, B. A., et al., Circulation 2:409, 1950

Intravenous injection of concentrated dialyzed urine of patients with congestive heart failure produced an antidiuretic effect in hydrated dogs. No such effect was exerted by urine of normal persons. The antidiuretic urinary substance is apparently unrelated to the posterior pituitary hormone, Pitressin.

Clinical Clippings, December, 1950.

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

May 17, 1956

FREDERICK P. BORNSTEIN, M. D., EDITOR—CASE NO. 634
PRESENTATION OF CASE BY DR. WILLIAM I. COLDWELL

HISTORY—Dr. M. Nathan Kleban:

A 68 year old Latin-American widower entered the hospital for his third admission on April 5, 1956, because of chills, fever, abdominal pain and vomiting.

For seven years prior to his first admission to this hospital on June 2, 1955, the patient had experienced sporadic episodes of post-prandial epigastric pain with radiation to the tip of the right scapula. Chills and fever had occurred for five years. What, if any, time relation there was to the pain was not stated. These symptoms had apparently become more frequent and severe during the three months before entrance, with anorexia and a 30 pound weight loss.

Physical Examination:

Right upper abdominal tenderness and a left femoral hernia were noted on physical examination. Blood counts were normal. A trace of albumin and few granular casts were found in the urine. Serum bilirubin and proteins were normal. Cephalin cholesterol flocculation was 3+ in 24 hours in one test, 1+ in 24, and 3+ in 48 hours in another. B. S. P. retention was seven per cent in 45 minutes. Occult blood was present in stools. Chest film, upper and lower gastro-intestinal radiological studies were reported normal. A gall bladder series was reported: "... there is practically non-visualization of the opaque media. Ill-defined radiolucencies are consistent with cholesterol calculi."

Hospital Course:

The patient's temperature was generally normal but on some days was elevated to as high as 103.4. On the sixty-second hospital day a cholecystectomy was performed. Pathological diagnosis was acute and chronic cholecystitis with no stones found. Discharge note stated that the patient had an "uneventful post-op course". One day before discharge on the thirteenth post-operative day, the temperature rose to 100.4. On the day of discharge the nurses noted a complaint of bleeding hemorrhoids.

One week after discharge, on August 25, 1955, the patient returned to the clinic complaining of right upper abdominal quadrant and bilateral shoulder pain, constant and moderately intense; jaundice and light stools. Fever of 100.4, jaundice, uncertain liver enlargement, a small epigastric mass, and tenderness in the region of the healed surgical scar were noted. Hemoglobin had dropped from 11.7 gms. on August 8 to 9.9 gms. WBC was 15,000. One urine was reported as normal, another was reported as giving a 4+ test for albumin and bile. Cephalin cholesterol flocculation was 4+ in 24 hours. Direct Van den Bergh was 4.2, indirect 6.2.

Small Stones

Common duct exploration on the fifth hospital day disclosed several small stones. There was an abscess in the gall bladder bed. A culture report was not found in the chart. Total serum bilirubin was 3.6, direct 2.7, nine days after surgery. Penrose drains were removed on the fifteenth post-operative day, when the T-tube began to be clamped at intervals. Following surgery temperature dropped to normal levels except on the sixth, fifteenth and twenty-second post-operative days when it rose to 99.6 - 100. Penicillin and streptomycin were administered. A cholangiogram was interpreted as "negative for retained calculi. There is good visualization of the common duct and its branches. The opaque media is observed to enter the duodenum without delay." Slow improvement and tolerance of continuous clamping of the T-tube were noted at the time of discharge on the twenty-third post-operative day.

Abdominal Pain

Intermittent attacks of abdominal pain, following ingestion of fatty foods, and relieved by vomiting of yellow material began soon after discharge. The patient stated that he drank very little, not more than 10 beers per day. Itching but no known jaundice began several weeks after discharge. Chills and fever, more severe abdominal pain, vomiting, and dark scanty urine began three days before his final admission on April 5, 1956.

Temperature on admission was 99.4, but jumped to 105 on the second day, and hovered between 101 and 102 rectally on the last two days. The patient appeared acutely and chronically ill. P. 90, R. 20, B. P. 110/70. State of nutrition was poor. Sclerae were slightly icteric. Oral hygiene was poor. The abdomen was diffusely tender with non-localized rebound tenderness and a "doughy" feel. Soft brown stool was present in the rectum. Active bowel sounds were heard.

Persistent Chills

Bowel sounds were not audible on the second day. Chills persisted. Stool was clay-colored on the fourth day. Epistaxis occurred, ecchymoses appeared, jaun-

dice deepened. Despite the use of parenteral fluids, Wangensteen suction, levo-arterenol, anti-cholinergics, vitamins, chloramphenicol, penicillin, meperidine, 3 units of whole blood, vitamin K, and cortisone, the patient went into a coma with irregular jerking and twitching movements of the arms, and died on the fifth hospital day.

Laboratory:

Urinalysis: S. G. 1.006-1.012; albumin 2-4+; sugar negative; urobilinogen negative to 2+; bile trace to positive; WBC none to 10-15/HPF; RBC none, 20/30 after retention catheter inserted.

Blood counts: Hb. 11.1, 8.3; hematocrit 40, 36, 41, 29, 30; WBC 18,800; 6,400; 11,900; 7,700; 22,000; stabs from 4-12, seg. 71-85.

Chemistries: Amylase 35; blood urea nitrogen 17.5-50; serum bilirubin, direct .75-10, total 7.25-17.0; alkaline phosphatase 2.1; total protein 4.6, serum albumin 3.0; cephalin cholesterol flocculation 2+ in 24 hours, 4+ in 48 hours; potassium 3.9, 4.2 meq/L; sodium, 109,108 meq/L; calcium 7.8, 6.6; CO_2 16, 10, 27 meg/L; chloride 107, 84, 92 meq/L.

Kline Exclusion: Negative

Blood culture: proteus, resistant. Drawn on third hospital day. Reported day following death.

X-rays: chest and abdominal films; No significant change from previous examination. No mechanical obstruction.

X-ray Discussion
Dr. Vincent M. Ravel:

The gastro-intestinal tract and abdomen of this man were thoroughly investigated. Our first examination was a gall bladder study with practically non-visualization of the opaque media and ill-defined evidence suggesting cholesterol calculi. If we have non-visualization following oral administration of a double dose of opaque media and we do not see any of the media, we feel that in over 90 per cent of the cases a calculus cholecystitis is present. Of course, if we can identify opaque stones, so much the better, but in general, when you do not see a gall bladder, you can almost be certain that it is a calculus cholecystitis.

The upper GI tract was negative radiographically, as was the barium enema. We were quite interested in whether or not we could see the appendix, whether there was any disturbance around the cecum such as tuberculosis or carcinoma or something involving the cecum with a spreading or ascending infection to the liver, such as pylephlebitis or multiple abscesses; but at no time were we able to radiographically demonstrate any of these. The appendix was visualized on the barium enema.

Stones Found

Of course the interesting thing is that the surgeons said there were no stones, and then of course postoperatively he developed a jaundice whereupon they operated and then they found stones. That frequently happens. Usually, the surgeon can't wait to get his gloves off before he says, "Where was them stones that you said was there and they weren't?" But in any event here again is a situation where you have a poorly or non-visualized gall bladder due to cholecystitis, probably a calculus cholecystitis. We had several abdominal films trying to demonstrate a ruptured hollow viscus or free air in the abdomen. We examined rather carefully to see if we couldn't demonstrate an air cholangiogram which you get in certain types of coli infections of the liver and cholangitis, but we did not succeed. As you see in the cholangiogram following the two operations, the common duct filled and emptied into the duodenum. There was no significant widening of the common bile duct.

Film Interesting

The last chest film is interesting because the right hemi-diaphragm is slightly more elevated, although not too much, than on a previous chest examination, which again suggests a possible enlargement of the liver, maybe secondary to sub-phrenic or hepatic abscess. I think you can almost exclude a sub-phrenic abscess because we see no real secondary phenomena at the base and there is no pleural effusion.

Fundamentally, from the radiographic standpoint, we have a patient with a calculus cholecystitis with a subsequent finding of common duct stones, with an inflammatory picture. There is no evidence of inflammatory obstruction or ruptured hollow viscus. I guess he just had a rather severe hepatitis or possible abscess.

Differential Diagnosis
Dr. William I. Coldwell:

The patient's illness resolved itself in several episodes, roughly corresponding to the three hospitalizations. First, he had a seven year history of epigastric pain. It was not stated as to whether this was right epigastric or mid-epigastric. The pain did radiate to the right inferior scapular area. If it were in the mid-epigastric area, it would be more in favor of pain arising in the hepatic or common duct, whereas the right epigastric would more favor the cystic duct or the gall bladder itself.

The sporadic character of the pain of course makes one think of sudden obstruction rather than gradual stenosis which usually does not produce very much pain. Either spasm or obstruction by stone may produce the typical biliary colic caused by the increased tension in the walls of the gall bladder or the ducts. The fever and chills that he had must have resulted from two factors, biliary stasis and infection.

The commonest lesions which produce this group of symptoms are, of course, gall stones or an ulcerating cancer in the region of the ampulla of Vater, with

bacteria entering the common duct, causing cholangitis, so-called Charcot's intermittent hepatic fever. This is probably due to a transient bacteremia.

Anorexia

This patient had anorexia which may have been due to a disturbance in the gastro-intestinal tract function, and/or to just a benign gall bladder disease or other benign disease in this region. His weight loss may have been just the result of the anorexia, and poor dietary intake, but certainly in malignancy these things are much more common than they are in simple gall bladder disease.

On admission, this patient had the usual right upper quadrant tenderness and the liver function was slightly impaired, as seen in the 3+ cephalin flocculation and slightly abnormal seven per cent bromsulphalein retention. The interesting thing was that occult blood was present in all examinations. Presumably this patient hadn't eaten very much red meat due to his poor digestion, and so on; and I think the presence of blood must be questioned, since uncomplicated gall bladder disease rarely produces bleeding, unless there happened to be erosion into a vessel, the hepatic artery, or one of the other vessels.

Another Possibility

If the liver is affected and there is anemia and bleeding from that source, we have another possible cause. Cholecystography of course shows a nonfunctioning gall bladder as Dr. Ravel mentioned and cholecystectomy was done on the 62nd hospital day. It seems that this is rather a long delay. There was no history of jaundice.

Serum bilirubin was reported as normal at this hospitalization, although the internes stated that at one time there was marked icterus of the sclerae which doesn't coincide with the laboratory findings. Following surgery this patient continued to run some fever, the day before discharge his temperature was 101 but again he departed and was soon to return, however.

There was a note that he did have bleeding hemorrhoids and that bright red blood was present, which may have been due to simple hemorrhoids or some portal cirrhosis or obstruction may have been present.

This also could account for the positive chemical test for blood.

Second Stage

You might say that the second stage of his illness began about a week later when he returned to the hospital, this time with constant pain radiating to both shoulders. Jaundice was present at this time and apparently acholic stools. Although no stones had been found in the gall bladder at the previous operation and they had not been noted apparently in the X-ray, the inference is that they must have been in the biliary passages at the time of surgery.

The presence of continued fever probably indicates an ascending cholangitis which began probably during his previous hospital stay following surgery, secondary to the obstructed biliary passages.

It also indicates the probable presence of multiple hepatic abscesses or a pylephlebitis. There was an abscess present in the gall bladder bed which could have caused some of the fever as well as the mass which was reported. At this time cephalin flocculation was 4+ and definite hepatic involvement was indicated, probably a cholangitis and an obstructive type of jaundice being present.

Surgery evidently cleared the biliary tract. In the normal cholangiogram, no biliary stricture could be seen. Again the patient's post-operative course was somewhat uneventful, but he did have a low grade fever, I think up to around 99.5 to 100 the day before he was discharged, and the interne's note was that he seemed to be on a downhill course.

Final Phase

The final phase of his illness began about this time, although six months elapsed following his discharge until he was again admitted last month. During that time he was not well at any time. He had intermittent attacks of abdominal pain, vomiting, itching, with a question of jaundice, probably it was jaundice with a history of itching of the skin.

Three days before his final admission in April of this year his temperature went higher, he had chills with more severe abdominal pain present. It was not stated exactly where, but merely as abdominal pain. He was vomiting, and dark, scanty urine was noted. Acholic stools were noted at that time and negative urobilinogen in the urine and bile in the urine; this favored an obstructive type of jaundice being present.

The 4+ cephalin flocculation and low serum protein at this time indicates co-existence of liver cell damage. The presence of two to four units of alkaline phosphotase which is normal, is unusual.

Cholangitis

The leucocytosis and shift to the left favors the presence of cholangitis and possibly pylephlebitis or abscesses of the liver. A confusing note is added with the statement that he had a small intake of ten beers per day which raises the bare possibility of portal cirrhosis; however, I think this is not very probable in this case.

On the first two admissions some abnormal urinary findings were noted, 3 to 4+ albumin, occasional red cells, and some granular casts; at this admission more consistently abnormal urinary findings were present; also, a definite anemia had developed, marked electrolyte imbalance developed, with hyponatremia, hypochloremia, hypocalcemia, and acidosis, all of which seem to me to be probably secondary to uremia.

Uremia

This uremia may have been due to a primary renal disease which probably was a nephrosclerosis, or it represents secondary damage due to poor fluid and electrolyte intake, vomiting, fluid loss through that source, loss of blood or even a hemolytic anemia which is not too uncommon in this type of case.

The terminal illness and death of this patient apparently resulted from a combination of uremia and cholemia with the hemorrhagic tendency resulting from hypoprothrombinemia secondary to liver failure and also due to the poor absorption of vitamin K from the gut due to lack of bile salts and probable obstructive type of jaundice.

The management of such cases is very difficult and I think the house staff and the attending men should be greatly congratulated on the excellent manner in which this difficult problem of fluid and electrolyte balance was controlled in the late stages of his illness.

Summary

In summary, I believe that this patient had chronic cholecystitis, choledocholithiasis and the presence of obstructive cholangitis, biliary cirrhosis secondary to bile duct obstruction. I believe that he also developed an ascending cholangitis and probable multiple abscesses of the liver during, shortly prior to, and following his original operation. Another possibility that one must consider along with these things which I think are present, is that of a cancer.

Cancer of the common bile duct near the ampulla of Vater may be present. The usual signs of the gall bladder enlargement, lack of fever and chills, and lack of pain were modified by a co-existence of cholangitis and of course by the gall bladder having been removed previously. The presence of occult blood, anorexia, weight loss and rapid downhill course, would make one think strongly of a cancer, as well as a benign lesion of the bile duct and liver.

Cancer of the Pancreas

Another possibility is cancer of the head of the pancreas. However, the fluctuating character of the jaundice, the absence of bile in the stools, and the presence of occult blood is much less common in pancreatic cancer than in bile duct cancer, and if any cancer was present, I would favor a lesion of the common bile duct near the ampulla of Vater, possibly with ulceration.

In summary, my diagnosis is acute, diffuse and chronic cholangitis secondary to biliary obstruction, with probable multiple liver abscesses and lower pylephlebitis, possible obstructive biliary cirrhosis also secondary to bile duct obstruction, cholemia, uremia, and nephrosclerosis.

Dr. Ward Evans:

It is obvious that this patient had an obstruction in the common bile duct and that he had a cholangitis and hepatitis secondary to that. The question is what would obstruct the common bile duct after you have surgery and a cholangiogram showing it to be open. Of course, tumor is a possibility; stricture is another. This may have been a stone in the common bile duct which was somehow overlooked in surgery and also on radiological examination.

There is one more mode of explanation which I would like to mention, and a fairly common one at that, namely, cystic duct syndrome. This refers to cases where for some reason the cystic duct is not resected close to the common duct. Then the remnant of the cystic duct may develop the function of another gall bladder, stones may form in it and cause obstruction.

Clinical Diagnosis: Obstructive jaundice due to carcinoma.

Dr. William I. Coldwell's diagnosis: Acute diffuse chronic cholangitis secondary to biliary obstruction; multiple liver abscesses.

Anatomical Diagnosis:

1. Biliary obstruction, complete, due to stone in common bile duct.
2. Acute purulent cholangitis.
3. Multiple abscesses of the liver.

Pathological Discussion
Dr. Frederick P. Bornstein:

On autopsy we found an elderly, extremely jaundiced man. His marked bleeding tendency was manifested by the presence of blood at the nostrils and mouth. A well healed sickle-shaped post-operative scar ran through the right upper quadrant approximately following the costal arch.

The main pathological findings were in the abdomen. Five hundred cc. of fluid were present in the peritoneum. The liver weighed 2100 grams. On the anterior surface of the left lobe there were numerous yellowish, sharply circumscribed abscesses which measured up to 2 cm. in greatest diameter. On sectioning, numerous similar abscesses were present in the liver parenchyma.

Gall Bladder Absent

The gall bladder, as was to be expected, was absent. The duodenum then was opened and the ampulla of Vater was inspected. The ampulla projected for about 1 cm. into the lumen of the duodenum and was occluded by a hemorrhagic, necrotic mass. When the ampulla was opened a large stone was found wedged into the lumen, producing the complete obstruction mentioned above (Fig. 1).

Further dissection revealed that the common bile duct was dilated and filled with purulent material, as were the smaller bile ducts (Fig. 2). On microscopic examination of the liver, again numerous fresh abscesses were found.

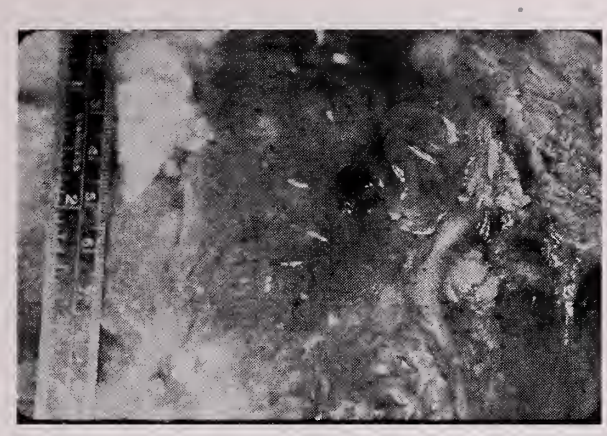


Figure 1

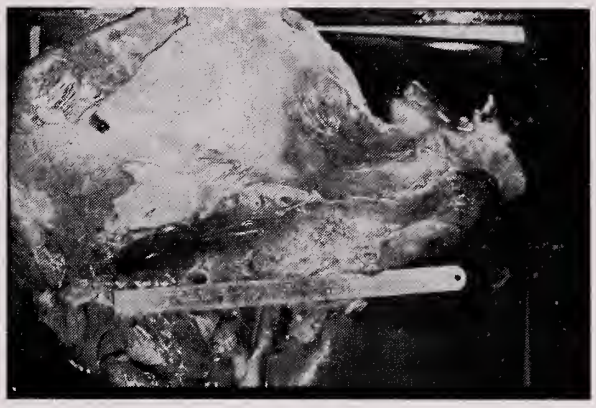


Figure 2

The other significant finding consisted of a fresh hemorrhage, about 500 cc., which was found in the stomach, and the finding of a typical icteric nephrosis.

Summary

In summary, then, death here was due obviously to the obstruction which produced an ascending infection with many liver abscesses. The question arises as to whether the stone which caused the obstruction was present when surgery was performed eight months earlier. Personally, I am inclined to consider that this stone was newly formed, or perhaps that a very small stone was present in the hepatic ducts which grew by accretion in the following months.

Dr. Charles E. Webb:

Dr. Bornstein said I was here to give the surgical review. There isn't much to review, really. Of course the case does prove first of all, I think, that the stone was there at the time of surgery the second time and it proves again that surgeons and X-ray men can overlook stones. It has been done before. It is going to be done again. I saw this case on this last admission, I hate to mention "casually"; but I was over here one night and not on the service actively, and saw the patient with Dr. Alexander, and we discussed the possibilities.

Apparently the man had come in that day, and he was having pain of course, but certainly at that time he didn't seem to be an acute emergency, but I was amazed to hear in the next few days of his dying. Certainly we have all seen many cases of common duct stones with repeated attacks of cholangitis, chills and fever, and so on, but most of them will get a little escape of bile around the stone and not go out as quickly as this man.

AMEBIASIS

Aureomycin And Amebic Dysentery

Armstrong, T. G., et al., Lancet 2:10, 1950

Aureomycin was effectively employed in treatment of acute ulcerative amebic dysentery but the relapse rate was high. It is suggested that the antibiotic be used in conjunction with other known amebacidal agents.

Clinical Clippings, October, 1950.

ORTHOPEDICS

Clinical Significance of Minor Inequalities In Leg Length

Redler, I., New Orleans M. & S. J. 104:308, 1952

Unilateral shortening of the lower extremity, a commonly encountered condition in adults and children, produces painful symptoms in the back, legs and feet. Idiopathic shortening involved the left leg in 80 of 99 patients observed. The discrepancy averaged one-half inch, ranging from three- eighths to one inch. Raising the heel of the shoe resulted in almost immediate relief in the majority of instances.

Clinical Clippings, July, 1952.

ANTIBIOTICS

Chloromycetin Treatment Of Typhoid Fever

Prior, J. A., et al., Ohio State M. J. 46:773, 1950

Of twelve typhoid fever patients treated with Chloromycetin, two relapsed. Further treatment resulted in reasonably prompt clinical improvement but subsequent eradication of organisms from the stools required sustained treatment for approximately two weeks.

Clinical Clippings, October, 1950.

PEDIATRICS

Tetanus Immunization: A Ten Year Study

Bigler, J. A., A. M. A. J. Dis. Child. 81:226, 1951

Immunization is considered adequate following either two or three injections of tetanus toxoid. Response to booster doses, administered as long as 10 years after initial immunization, begins on the third or fourth day. Antitoxin titers rise rapidly thereafter.

Clinical Clippings, April, 1951.

ORIGINAL ARTICLES

Changing Concepts in the Management of Poisonous Animal Injuries: A Plea for Better Management

By Robert J. Antos, M. D., Phoenix

The currently accepted methods of treating bites or stings of poisonous animals evolves around two principles: The relief of pain and sedation. This mode of therapy has not changed for many years, and any attempt to change it has met with much opposition. Nevertheless, there is no experimental evidence to support this procedure, and there is now very convincing evidence that, for the most part, it is wrong.

A few years ago Dr. H. L. Stahnke, director of the Poisonous Animals Research Laboratory at Arizona State University, Tempe, proposed the use of cryotherapy for scorpion stings. This met with strong criticism from some of the medical practitioners of Arizona. As a result of this controversy a study was begun to shed further light on this problem. First, the records of the cases treated in some of our hospital emergency rooms were checked back over a period of about two and a half years. Then questionaires were sent out to physicians throughout the State. The results are summarized as follows:

Table I

16 Cases scorpion sting treated with Demerol (Meperidene or Isonipecaine)
4 Cases scorpion sting treated with morphine
2 Cases scorpion sting treated with phenobarbital
2 Cases scorpion sting treated with other sedatives
21 Cases Black Widow spider bite treated with Demerol
5 Cases Black Widow spider bite treated with morphine
7 Cases Black Widow spider bite treated with phenobarbital *
11 Cases Black Widow spider bite treated with calcium salts, I. V.
1 Case Black Widow spider bite treated with antihistamine.
36 Cases of unknown origin treated with Demerol.
2 Cases of unknown origin treated with morphine.
11 Cases of unknown origin treated with phenobarbital**
3 Cases of unknown origin treated with:
1 case, antihistamine
1 case, codeine
1 case, cortisone

Only during the past months have records indicated any use of ice or chilling of affected parts as part of therapy. Apparently some of the physicians are giving credence to this form of therapy.

Favorite Remedy

From Table I it can be seen that Demerol seems to be a favorite remedy. Also a large proportion of these patients present themselves not knowing what bit or stung them. In these latter patients there is a question of what to give; Demerol leads, but why?

The next step was to go to animal studies. Dr. Stahnke has been working with this problem for several years. His work with animals has shown that the LD_{50} of several venoms, especially those of snakes and scorpions is very much lowered by the administration of Demerol or morphine.[1] Likewise, Dr. Stahnke and his workers have shown that chilling of the site of innoculation of the venom can slow down the absorption enough so that the normal detoxification mechanisms of the body can better cope with the poison. Again, along a similar line, the application of a tourniquet or impairment of the superficial venous and lymphatic return in any way, even by simple pressure, will slow down absorption of the poison. Finally, a combination of the two procedures, impedence to circulatory return and cooling of the site of innoculation, give the best results.[1]

Loud Outcries

When the cryotherapy or chilling was proposed, several loud outcries against this were forthcoming. In rebuttal to this we offer this evidence:

1) The chilling of the body prior to surgery is now an accepted procedure.
2) The freezing of the skin to stony white hardness for skin planning or abrasion is now an accepted procedure.
3) The exposure of animal tissues to freezing temperatures (ice water & CO_2 snow) both with and without tourniquets or other circulatory obstructions, did not in our hands, pro-

From the Department of Medical Research, Good Samaritan Hospital, Phoenix

* Cases treated with phenobarbital had no indication on chart of severe pain; attending physician ordered this drug apparently because apprehension was predominant indication.

** Cases of unknown origin treated with phenobarbital had no indication on the chart of severe pain; attending physician ordered this drug apparently for the same reason as in known bites or stings; namely, predominant apprehension.

duce more than temporary injury of the nature of a first, or mild second degree burn. None of our animals suffered tissue necrosis, other than slight blistering or peeling away of the dead epidermis.

Dr. Stahnke and his workers went even further and immersed rat tails in water at the freezing point for periods of a week or more, and the animals displayed no tissue necrosis.

The only way in which we were able to produce necrosis was to apply a tourniquet so tightly it shut off arterial and deep venous circulation, and this produced necrosis whether or not the tissue was chilled. Actually these latter animals showed less extensive necrosis in the chilled tissues than in those animals in which the temperature of the tissue was not lowered. Apparently the metabolic demands of the tissues are less when cold, and thus they can better withstand anoxia.

Critics Answered

At this point is would seem opportune to answer the critics who claim cryotherapy would produce a slough or ulceration. Animal experiments, and recent trials on human patients show that chilling and application of tourniquets or pressure, so as to obstruct venous and lymphatic return, do *not* produce tissue necrosis if properly administered. Finally, even if they did produce damage — which they do not — would it not be better to have a little scar than suffer a death? Would they condemn vaccination or removal of skin for grafting just because they produce local tissue damage? I think not!

The methods we use now have gone through various modifications, but now a fairly uniform procedure is possible. At first only ice water immersion was used. Then pressure or light intermittent application of tourniquet was added. Gradually the length of time of tourniquet application was lengthened from five minute intervals until now we leave them on a half hour or more at a time, even several hours.

Ethylchloride Spray

For first aid measures we used ethylchloride spray until ice could be obtained. Recently we began using Frigiderm* and found it superior to ethylchloride. Frigiderm is non-explosive, is not flammable, is not an anesthetic, and does not require refrigeration. It is easily tossed into a fishing tackle box or first aid kit. The results with Frigiderm have been so favorable, we now prefer to use it in place of ice. It may be sprayed directly on the skin.

When this is done, there is a slight transitory burning sensation after the first two or three seconds. An alternative method, and the one we advise for self administration to hunters or workers in infested areas, is to wrap the affected part in a few layers of thin gauze or cloth and spray the Frigiderm onto this.

This precludes over-freezing of tissues and makes the supply of the refrigerant last longer. This procedure may be applied to the bite or sting of any poisonous animal. We have used it successfully also in the stings of bees and wasps.

Procedure Advocated

The procedure advocated when the offending animal is not known is as follows:

1. Apply moderately firm tourniquet at once.
2. Chill with Frigiderm.
3. Give calcium salts I. V. If peripheral pain is relieved immediately by calcium, the chances are strongly in favor of a Black Widow spider bite. We have come to regard the relief of peripheral pain by calcium as diagnostic of Black Widow bites. If the calcium does not relieve peripheral pain, most likely some other animal was involved. Then the tourniquet and chilling alone is used, otherwise further calcium is given I. V. as needed. This procedure has been used with favorable results in 27 cases during the past year. It offers simplicity and predictability — and is liked by interns, therefore.

Recently Dr. Stahnke and his workers have confirmed the efficacy of the use of Frigiderm on not only scorpion stings and Black Widow bites, but in the case of rattlesnake bite as well. [2]

Summary

Morphine and Demerol—and most likely other narcotics as well — are contraindicated in poisonous animal bites and stings.

The advocated treatment of choice in these cases is to apply pressure or tourniquet to obstruct only superficial venous and lymphatic return, then chill the affected part with Frigiderm preferably, else use ice or water. The tourniquets need not be released more than every half hour or even more.

Animal experiments and human trials have shown that the toxicity of venoms is increased by narcotics, and chilling and tourniquets do not produce tissue necrosis as is claimed by some—unless the pressure is so carelessly applied as to obstruct arterial and deep venous flow.

The application of cold alone will help slow the absorption of venom, and this may be used by those with aversion to tourniquets, or by the untrained as a first aid measure.

Frigiderm has proved to be the best and safest refrigerant so far tested. It is even better, and faster acting, than ice or ethylchloride.

Addendum

Since this report was submitted there have been treated nine additional cases of poisonous animal in-

(Continued on page 426)

* Frigiderm, dichloro-tetrafluoro-ethane, distributed by Brachvogel & Hovey, Los Angeles, and available through most surgical supply agencies.

Clinical Use of the Electrocardiogram in Electrolyte Disturbances

By J. A. Abildskov, Capt., M. C., USAR,
William Beaumont Army Hospital, El Paso

The electrocardiogram is often used as a diagnostic aid and therapeutic guide in electrolyte disturbances. These disorders may be encountered in all branches of medicine so that widespread appreciation of the ECG's usefulness in this area is desirable. It is especially important that the limitations of the ECG in indicating these disorders be recognized and that certain easily committed errors of interpretation be avoided.

This report does not constitute a complete review of the extensive literature on the general subject of electrolytes and electrical phenomona in the heart. It is intended to present some clinically useful information concerning the effect of common electrolyte alterations on the form of the ECG.

Hypokalemia and Hypocalcemia

As is well known these electrolyte disturbances occur singly and in combination in a variety of disease states. The ECG is often helpful in recognizing these disorders and is indispensable in their management if intravenous replacement is necessary.

Rational use of the ECG in these circumstances depends on detailed knowledge of the changes to be expected. The ECG changes associated with hypokalemia may be summarized as depression of ST segments, lowering or inversion of T waves and the most striking alteration which is apparent prolongation of the QT interval.

Detailed studies have indicated that the actual QT interval is not prolonged in hypokalemia, but that the U wave becomes more prominent and fuses with the preceding T wave to give an apparent prolongation of QT. (1-2) According to the studies of Surawicz and Lepeschkin, the QU interval itself also remains within normal limits.

In many records a notch between the T wave and the ascending limb of the U wave can be distinguished. This notch is often most evident in precordial leads V_3 and V_4 and in a unipolar lead from the left arm. In some records no such notch is apparent.

Three Procedures

Under these circumstances three helpful procedures for determining whether the QT interval is truly prolonged have been suggested (2). One of these consists of measurements from the onset of QRS to the onset, apex and end of the wave in question. These measurements may be compared to normal values to determine whether they are most consistent with measurements of the T wave or the U wave. A second method consists of the simultaneous registration of a phonocardiogram.

The studies of Surawicz and Lepeschkin have indicated that the second heart sound does not begin later than 0.03 seconds before the apex of the U wave. A third procedure for differentiation of the T and U waves consists of the administration of substances in an attempt to make the ECG more typical. Thus if a deficiency of calcium and potassium exists, the administration of calcium intravenously will shorten the ST segment, cause an earlier appearance of the apex and end of the T wave and a better separation of T and U waves.

In hypocalcemia, there is an actual prolongation of the QT interval. This has been shown to be entirely the result of prolongation of the ST segment. The T wave itself is not prolonged in hypocalcemia and may remain normal in contour.

Other Factors

The ECGs of patients with hypokalemia and/or hypocalcemia are being simultaneously influenced by many factors other than the serum levels of potassium and calcium. The state of the myocardium including alterations of intracellular electrolytes, alterations of other electrolytes in the serum and cells, acid base balance and the influence of shock and of drugs represent some of the factors which must be taken into account in using the ECG in diagnosis or management of electrolyte disorders.

Some of these factors may result in ECG changes which are easily mistaken for those produced by hypokalemia or hypocalcemia. Prolongation of the QT interval occurs in a variety of disease states including active myocarditis, arteriosclerotic heart disease and in association with cerebrovascular accidents (4-5).

In patients in whom QT prolongation is the result of both myocardial disease and altered electrolytes it may be impossible to reduce the QT interval to normal by electrolyte replacement, and attempts to do so may result in dangerously high serum levels of the electrolytes. To avoid such misuse of the ECG, the influence of therapy on other ECG features of the electrolyte disturbance should be carefully noted.

Experimental Studies

According to the experimental studies of Roberts and Magida, low plasma Ph and low serum bicarbonate and sodium produce ECG alterations similar to those associated with hyperkalemia (6). When

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such conditions exist together with hypokalemia, the ECG features of the latter may be masked. This is especially important in patients under therapy for diabetic acidosis and indicates the necessity for actual determination of electrolyte levels in the serum. These workers have also reported experimental evidence that increased plasma Ph, bicarbonate and sodium produce electrocardiographic altaerations similar to those of hypokalemia.

It is not definitely established whether the ECG alterations seen in association with hypokalemia and hypocalcemia are primarily the result of low serum levels of the electrolytes, low intracellular concentration or both. The correlation of ECG findings and serum levels of potassium and calcium has been extensively studied and many instances of failure of these to correlate are reported (8-9). For this reason some workers have concluded that the ECG probably reflects intracellular concentration of electrolytes more closely than extracellular levels.

Multiple Factors

It should be remembered however, that multiple factors may be influencing the ECG and that adequate quantitation of the ECG features of electrolyte disorders is difficult. Surawicz and Lepeschkin have stated the opinion that the altered potassium gradient across the cell membrane in hypokalemia might be expected to show a better correlation with the ECG pattern than either intra or extracellular concentration alone (2).

When certain drugs are being administered their influence on the ECG must be taken into account if the ECG is used to evaluate electrolyte disturbances. The similarity of the ECG pattern which sometimes results from combined quinidine and digitalis therapy and that occurring with hypokalemia has been emphasized (2). With such therapy the ST segment depression and diphasic T waves characteristic of digitalis effects are sometimes combined with prominent early U waves which may partially merge with the T waves to give a pattern indistinguishable from that of hypokalemia.

Hyperkalemia and Hypercalcemia

The electrocardiographic effects of potassium and calcium infusions have been well defined experimentally. In the case of K these consist sequentially of tachycardia, increased voltage, early onset and peaked contour of T waves, bradycardia, widening and decreased voltage of P waves, nodal or idioventricular rhythm and increase in the duration of QRS and T waves. Although these changes occur regularly with potassium infusion it cannot be assumed that they represent only the effect of increased serum levels of this ion. The increased potassium in the serum is associated with decreases in plasma bicarbonate and Ph and a slight fall of sodium concentration, and the studies of Roberts and Magida seem to indicate that the latter three factors produce ECG changes similar to those resulting from increased serum potassium (6).

Their studies imply that both clinical and experimental situations involving hyperkalemia include an altered concentration gradient across the cell membrane of sodium, bicarbonate and hydrogen ions as well as potassium. With multiple factors which may be present in various degrees it is not surprising that ECG abnormalities and clinical symptomotology cannot be closely correlated with serum potassium levels.

Variable Effect

Hypercalcemia as seen clinically in hyperparathyroidism and after Vitamin D therapy results in shortening of the relative QT interval which is sometimes accompanied by an increased PR interval. The effect of high serum calcium on the form of T waves is variable but often consists of decreased voltage especially in leads II and III. Calcium infusion causes marked bradycardia and prolongation of PR and QRS intervals. High serum concentrations of calcium produce ventricular extrasystoles and even ventricular fibrillation.

Summary

Electrocardiographic alterations are useful in the recognition and management of certain electrolyte disorders. These alterations do not always correlate with serum levels of electrolytes since other factors such as myocardial disease, acid base balance and intracellular concentrations of the electrolytes may be simultaneously affecting the ECG.

The ECG does provide extremely important information concerning the effect of electrolyte alterations on the heart. Because of its immediate availability it is especially useful as a guide in the management of the alterations.

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Insulin Additives: Glucagon, Nitrogenous Substances, Metallic Elements, and Specific Pharmacodynamic Agents

By Theodore M. Feinblatt, M. D.,
and Edgar A. Ferguson, Jr., Chemist, Brooklyn, N. Y.

PART III

ERGOT DERIVATIVE (as an insulin additive)

Ergot derivatives have become increasingly popular as a remedy for migraine,[17,18,19] vasomotor imbalance, gastrointestinal disorders,[16] and associated neurogenic complaints.[20] Many of these syndromes occur in diabetics. It is claimed that diabetics are particularly prone to certain neurogenic disorders.

This claim is made with reference to young diabetics, — that they are specially affected by "nervous" phenomena in regard to the diabetic state. The evidence which has so far accumulated apparently proves that this is not so in regard to the "juvenile" type of diabetes in the young and in the adult. While it is evident that "nervous" or vegetative nervous system influences are not absent in the "juvenile" diabetic, it has now been shown that there is a deficiency of normoglycemic response in the juvenile diabetic.

Nervous Mechanism

This nervous mechanism of homeostasis (which tends to restore the normal person or the "obese" type diabetic to a higher blood sugar level as soon as insulin is injected) is apparently lacking in the "juvenile" type of diabetes. In this connection it should be noted that at the turn of the century Von Noorden, who treated diabetics before the time of insulin, noted the so-called "nervous" diabetic only in older age groups.

As our understanding of the neurogenic lesions induced by vitamin deficiencies peculiar to diabetes has increased, the "nervous" complaints have given way to specific nervous lesions now properly diagnosed in many cases as deficiencies in enzyme[5] and vitamins with special reference to cyanocobalamin (B_{12}).[21] It appears from the above discussion that the carbohydrate tolerance could be more readily increased in the "juvenile" diabetic by changing to a high carbohydrate ratio diet,[12] by increasing the degree of con-

EFFECT OF HYDERGINE* AS AN INSULIN (AMERICAN) ADDITIVE (MIXED, SUBCUTANEOUS) ON RABBIT BLOOD SUGAR (FOLIN)

MILLIGRAMS DECREASE PER UNIT PER KILO

ORDINAL POSITION	40-36 MG.	35-31 MG.	30-21 MG.	20-16 MG.	15-10 MG.
	0.5 / .05 / 0.1 mg/KG	0.5 / .05 / 0.1 mg/KG	0.5 / .05 / 0.1 mg/KG	0.5 / .05 / 0.1 mg/KG	0.5 / .05 / 0.1 mg/KG
12			28′ 27′ 29″		
11					
10			30′ 30′ 30		
9					
8			27′		
7					
6		34′ 35′ 34″	21′ 27′ 28″	17′ 16′ 18**	
5					
4		31′	28′	17′	
3					
2	39′ 38′ 36″	33′ 32′ 34″	26′ 28′ 24″	19′ 19′ 17″	11′ 10′ 15*
1					

Figure 4

*******	Standard Insulin Curve (See Fig. 2.)
xxxxxxx	Insulin mixed with 0.5 mg. per kilo of Hydergine* (35 times human dose) produces curve identical with standard insulin (average of 14 experiments).
cccccc	Insulin mixed with 0.05 mg. per kilo of Hydergine* (3.5 times human dose) (average of 11 experiments).
oooooo	Insulin mixed with 0.1 mg. per kilo of Hydergine* (7 times human dose) (average of 10 experiments).

* Hydergine contains equal parts of Dihydroergocornine, Dihydroergocristine, and Dihydroergokryptine.

Note: The ordinal position is regarded as 1, 2, 3, 4, etc., when 49 experiments are used as a base; 1, 3, 5, 7 etc., when 12 to 14 experiments are used; and 1, 5, 9, 12 when there are approximately 10 experiments

trol of the diabetic state,[4] or by utilizing glucagon-free insulin[3]; rather than by reducing "nervous" influences or by treating the autonomic nervous response system.

Obese Type

On the other hand the "obese" type, usually found in the older age group, has been recognized from the very beginning as the diabetic more likely to suffer from "nervous" influences. The "juvenile" type is often a "complete" diabetic, whereas the "obese" type more often has some insulin production (which is overcome by an insulin inhibiting hormonal imbalance, (insulinase)).[33] This "obese" type may be sensitive to nervous influences.

Studies in progress tend to confirm the theory that ergot as an insulin additive does not influence the absorption or effect of insulin commercially available in the United States on normal adults or on "juvenile" diabetics.

Ergot Derivative

The particular ergot derivative tested as an insulin additive consisted of an equal amount dihydroergocornine, dihydroergocristine, and dihydroergokryptine. This composition must be borne in mind when evaluating the results because small changes in the chemistry of ergot derivatives may cause wide variation in pharmacodynamic action.[10] Tests were made in which a dose of 0.5 mg. of the ergot derivative noted was given for each rabbit unit of insulin per kilo (35 times the average human dose).

Another group was tested in which 0.05 mg. of ergot derivative per rabbit unit of insulin per kilo was given, this is 3.5 times the average human dose A third group was given 0.1 mg. of ergot derivative per rabbit unit of insulin per kilo. This is seven times the average human dose of the ergot derivative. In no case was there any effect on the blood sugar absorption curve of rabbits. Rabbits died in insulin shock in the expected statistical distribution.[6] Figure 4, demonstrates the conformity of the ergot insulin group with standard insulin.

ADRENOCHROME (as an insulin additive)

Adrenochromes have been known as systemic hemostats for a long time in Europe.[22] It was also known to be of extremely low toxicity.[23, 24, 25, 26] Adrenochrome decreases capillary permeability and increases capillary resistance without affecting the clotting mechanism or the prothrombin and Vitamin K levels.[23] It therefore does not stop bleeding from ruptured vessels of larger size. Adrenochrome is the oxidation product of adrenalin.[28] Until recently it was insufficiently stable to use commercially. Now, however a stable form, the monosemicarbazone of adrenochrome, has been developed.[11] This form is stable and may be solubilized by salt complexing with sodium salicylate.

Since many diabetics exhibit hemorrhagic tendencies, particularly in retinitis in which Adrenosem* is used regularly,[27] a determination of its effect on the diabetic state is of great interest. Adrenosem* is used in diabetics to control exudative processes and bleeding, either as a primary medication (in which case it may be taken for a long period of time) or as a preliminary medication before the use of intramuscular trypsin. Trypsin is usually contraindicated when hemorrhagic tendencies are present, but may be used after pre-medication with Adrenosem.*[27]

*Adrenochrome monosemicarbazone, supplied as Adrenosem by the S. E. Massengill Co., Bristol, Tennessee.

EFFECT OF ADRENOSEM* AS AN INSULIN (AMERICAN) ADDITIVE (MIXED, SUBCUTANEOUS) ON RABBIT BLOOD SUGAR (FOLIN)

	MILLIGRAMS DECREASE PER UNIT PER KILO				
	SENSITIVE		NORMAL	INSENSITIVE	
ORDINAL POSITION	40-36 MG.	35-31 MG.	30-21 MG.	20-16 MG.	15-10 MG.
12			aaaaa aa*****aa aa** 21 **aa		
11			aa** 30 **aa		
10			aa** 27 **aa		
9			aa** 24 **aa		
8			a** 29 **a		
7			a* 26 *a		
6		aaaaa*	24 *aaaaa		
5		aaaaa*****	22	17*****aaaaa	
4	aaaa*****	36	21	19 *****aaaa	
3	a****	33	22	20 ****a	
2	a* 39	32	28	15 11 *a	
1	* 40	34	26	16 11 *	

Figure 5

******* Normal rabbit response to American insulin.

aaaaaaa Insulin mixed with 2.5 milligrams Adrenosem* per kilo (35 X human dose) (average of 25 experiments)

* Adrenochrome semicarbazone

Adrenosem

It was therefore thought desirable to discover whether Adrenosem* would cause elevation of the blood sugar or modification of the insulin absorption rate in rabbits. It was found that large doses (35 times therapeutic dose) in rabbits did not raise the blood sugar nor affect insulin absorption rate. Some of the rabbits used were pre-medicated for a period of four days with thirty-five times the human dosage level of Adrenosem*. This is in accordance with results of long continued high dosage of Adrenosem* in a controlled diabetic which showed no effect on the insulin dosage required.[29]

The effect on rabbit blood sugar is noted in Figure 5.

HISTAMINE (as an insulin additive)

Certain of the simple proteins (protamine) such as salmine and clupeine, which may be used to modify insulin for forming complex salts with less solubility at the pH of the blood, yield histidine on hydrolysis. Thus, they are related to simple amino acids. Histidine itself does not affect absorption time of insulin, but histamine, a closely related chemical compound,[31] speeds up the absorption of insulin in both man[29] and rabbits, probably due to its specific pharmacodynamic action.[31] The increased absorption rate of insulin with histamine is demonstrated in Figure 6.

In summary, insulin additives may be arranged under three headings as follows:

*Adrenochrome monosemicarbazone, supplied as Adrenosem by the S. E. Massengill Co., Bristol, Tennessee.

FASTER INSULIN EFFECT	NORMAL EFFECT	DELAY OF INSULIN EFFECT
Histamine (reported)	Ergot derivative (reported)	Gulcagon
		Zinc (old form)
	Adrenochrome (reported)	Zinc (new form)
		Aluminum Potassium Sulfate
		Globulin
		Hexamethylene Tetramine
		Protamine
		NPH

In conclusion it has been reported, based on rabbit-insulin studies, that the adrenochrome and the ergot derivative do not affect insulin absorption while histamine speeds up insulin absorption. The position of the reported substances in the orientation of the known literature of some principal insulin affectors has been defined.

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EFFECT OF HISTAMINE AS AN INSULIN (AMERICAN) ADDITIVE (MIXED, SUBCUTANEOUS) ON RABBIT BLOOD SUGAR (FOLIN)

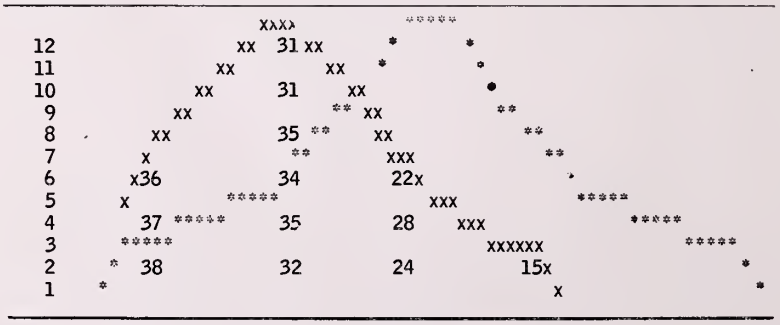


Figure 6

******* Normal rabbit response to American insulin.

xxxxxxx Insulin mixed with 0.1 mg. histamine per kilo (average of 13 experiments)

For your enjoyment – Courtesy of Boyle and Company



"Nine iron!"

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HEADACHE

Review Of The Headache Problem

Friedman, A. P., Am. Pract. 1:948, 1950

Of products recently recommended for relief of migraine, only Cafergone holds much promise. However, some patients have responded to dihydroergocornine (DHO-180) but further evaluation of this agent is required. "The use of arteriography and study of the vasomotor and endocrine physiology are promising approaches to the problem."

Clinical Clippings, December, 1950.

OBSTETRICS

Mumps In Pregnancy

Schwartz, H. A., Am. J. Obst. & Gynec. 60:875, 1950

The author observed eight pregnant patients who contracted mumps during gestation and two such patients in whom mumps was suspected. One patient aborted but the remainder went to term and were delivered of normal infants. This is in contrast to scattered reports of congenital anomalies in infants whose mothers acquired mumps during early pregnancy.

Clinical Clippings, December, 1950.

The Significance of the Free Serum Iodide Level in the PBI Determination

By J. A. Hancock, Ph. D.,* Texas Western College, El Paso

In well over a thousand P. B. I. and F. S. I. determinations carried out in the laboratory at Providence Memorial Hospital in the past two years, using a modified[1] method of O'Neal and Simms[2], it has been noted that a significant percentage of the euthyroid P. B. I. levels, four to eight gamma per cent, have been accompanied by a low F. S. I. level in comparison to the established norms of from two to four gamma per cent. A possible explanation of this phenomenon is hereby presented along with other pertinent observations regarding the F. S. I. levels and their effect upon the reported P. B. I. values.

Low F. S. I. Levels

The F. S. I. level indicates the micrograms (gamma %) of free iodide per 100 ml. of serum. This is the "iodine" which is available to the thyroid for the production of thyroxine, its precursors and related physiologically active compounds, and without which, the thyroid cannot function properly. While the accepted range for the F. S. I. is from two to four gamma, these values were determined in the most part in areas which are not "iodine deficient"; e. g., Los Angeles and other costal areas. Since El Paso lies in an iodine deficient area, it is to be expected that the norm for the F. S. I. value would be lower than that in iodine rich areas. The chemical significance of a low F. S. I. value is substantiated by the high incident of goiter in iodine deficient areas. The logical chemical interpretation of a low F. S. I., around one gamma per cent, with a low normal P. B. I., around four gamma per cent, would be that an increase to normal levels in the F. S. I. would result in a corresponding increase in the P. B. I. This effect has been noted in a few of the cases followed, and it is felt that further investigation along this line is indicated.

High F. S. I. Levels

In the normal case of hyperthyroidism, the P. B. I. level is significantly elevated (from eight to twenty gamma per cent) while the F. S. I. level remains substantially normal, seldom over 6 gamma per cent. Because of the nature of the method of determining the P. B. I. value, abnormally high F. S. I. levels are reflected in the P. B. I. report. At the present time, the interpretation of the F. S. I. and P. B. I. levels is left to the attending physician. The effect of a high F. S. I. level, caused by an extraneous source of iodine such as medication, upon the determined P. B. I. value has been investigated in this laboratory, and an adsorption isotherm for moderate elevations of the F. S. I. versus apparent P. B. I. values determined. When the data warrants, P.B.I. reports should carry not only the observed P. B. I. and the F. S. I. value but also the "corrected" P. B. I. value as determined from the adsorption isotherm.

Iodine compounds used in X-ray studies elevate the F. S. I. value to such extreme levels that its effect on the P. B. I. cannot be determined. The period required for the clearing of these componuds seems to vary from patient to patient and with the type compound used. Generally, three to six months is sufficient, although one case of over 18 months still shows a F.S.I. and a P.B.I. of greater than twenty gama,—the terminology used to indicate iodine contamination, and thus, an invalid determination.

P. B. I. vs. B. M. R.

The P. B. I. and F. S. I. together require one ml. of serum which may be obtained under all normal circumstances; e.g., fasting is not required and moderate hemolysis of the serum specimen does not interfere with the determination. Exercise, emotional stress, smoking, etc. have no effect upon the P. B. I. level. While there is no hard or fast rule or guide to convert P. B. I. and F. S. I. values to the conventional B. M. R. values, a careful consideration of both the P. B. I. and F. S. I. values does allow an approximation to an equivalent B. M. R. value that would not be in error by more than one or two units.

1 Hancock, J. A., Southwestern Medicine. *36:* 168 (1955)
2 O'Neal, L. W. and Simms, E. S., Am. J. Clin. Path., *23:* 493 (1953)

* Professor of Chemistry, Texas Western College and Chemical Consultant, Providence Memorial Hospital, El Paso, Texas.

Changing Concepts . . . . .

(Continued from page 419)

jury. Three were scorpion, two Black Widow, and one unknown; all treated by the method previously outlined. In addition there were two cases of scorpion sting and one of Black Widow bite in which Promazine was used to alleviate pain or apprehension. Promazine seemed to work satisfactorily, however, it is obvious that three cases is an inadequate series for evaluation. Promazine is to be tried further, and a report on it will be made at a later date.

Also since preparation of this report, Dr. Stahnke has finished his report on meperidine synergism[3], and it is being published. Meperidine shows greatest synergism with the venom of the scorpion, *Centruroides Sculpturatus,* and a definite but not so great a synergism with the venom of the rattlesnake, *Crotalus Atrox.*

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Clinical Note on the Medical D. & C.

By Joseph B. Raddin, M. D., Phoenix

A medical D. & C. consists of the intramuscular injection of 25 mg. of progesterone in oil daily for three successive days. For obese women 50 mg. followed by another 50 mg. dose in 48 hours is suggested. Within three or four days a rather profuse menstrual-like uterine bleeding lasting seven to ten days is to be expected. This requires no therapy, but if the amount of flow is alarming, an additional dose of progesterone can be administered.

This menstrual-like flow will begin a few days following therapy even in cases of prolonged amenorrhoea unless conception has occurred. It is also a reliable test for pregnancy. If no bleeding occurs, pregnancy is probable. If conception has occurred it will be protected and the nausea and vomiting of early pregnancy relieved. Any tendency to spontaneous abortion or miscarriage will also be counteracted. Rarely bleeding will be induced from a pregnant uterus but never is an abortion started.

Indications

Indications for the medical D. & C. are numerous. The more important are suggested:

1. Mild or moderately severe but prolonged menstrual bleeding is promptly controlled.

2. In severe uterine hemorrhages, intravenous estrogen (premarin) followed by 75 or 100 mg. of progesterone in oil in divided doses as suggested is, with few exceptions, always successful.

3. Hormone imbalances causing amenorrhoea or normal menses alternating with profuse menstrual hemorrhages are controlled promptly. Pregnant mare serum hormone, thyroid gr. i and stilboestrol 0.10 mg. is indicated therapy and should promptly be prescribed to regulate future menstrual periods.

4. Vaginal bleeding due to menopausal estrogen therapy or estrogen withdrawal bleeding is quickly controlled.

Irregular uterine bleeding due to carcinoma of the fundus, for which surgical D. & C. may be indicated as a diagnostic procedure, should not be confused with the indications for a medical D. & C. It is only mentioned because the history and inspection of the cervix should make clear whether the medical or surgical procedure is indicated.

Summary

Recurrent vaginal hemorrhages as well as amenorrhoea are commonly due to hormone imbalances and should be so treated. Hysterectomy is no longer indicated for uterine hemorrhage except when due to myoma of the uterus. Surgical D. & C. should be a diagnostic procedure for carcinoma, not a therapeutic measure for uterine hemorrhages due to sex endocrine gland disorders. The medical D. & C. is a reliable test for pregnancy. Hormone therapy will cure endocrine causes of amenorrhoea and menorrhagia when prescribed after the medical D. & C.

Growth of A Diagnostician

First Year:

The patient's symptoms: "At the beginning of the affection, I was tormented by intolerable headaches with continual swooning, but without loss of sense or of reason. Then I felt a numbness all over the body."

Examination revealed: "His tongue was coated with whitish sticky rust, and little by little suffered much heat and great pains. The nose and lips were the seat of frequent pain and on them appeared little blisters . . . His legs were heavy, weak and feeble, so that it was difficult to walk . . . His head trembled in such a way that with a single movement of his body, without holding to anything, he would fall on the floor without losing his senses. The bowel movements were difficult . . . All his body, especially his hands were blackish, scabby and terrible."

Past history revealed that his diet consisted of corn meal, fat and molasses. — Gasper Casal, 1735.

Second Year:

An infectious epidemic appeared in the town of Messina, Italy: "Because of an infection of the breath passed around among them as they talked, one so infected another that all were seen as if racked with pain, and, in a measure, severely shaken . . . pustules appeared on the thigh or arm in the manner of lenticulae, which thus infected and penetrated the body, wherefore they violently spat forth blood; after spitting for three days incessantly without any cure for the dreaded disease, they departed from life; and not only did whoever talked to them die, but indeed whoever bought, touched, or seized anything belonging to them." — Michele Piazza, 1347.

Third Year:

"In a man, aged 46, vesications first appeared on the scrotum and about the groins, during the month of October 1789; the eruption afterwards extended to other parts of the body, and to the tongue: it was removed in about two months. He continued free from complaint till February 1790, when a few vesications appeared on his wrists; others arose on his arms, neck, sides, scrotum, and lower extremities. Those on the legs were slightly inflamed, and their contents became turbid from an admixture of pus: the rest were pellucid, and without any redness or inflammation around them. The disorder continued nearly three months: after it had disappeared, the patient enjoyed good health but he was again affected with the eruption, at at latter end of June, in the year 1790." — Robert Willan, 1808.

Suicidal Miltown, Hazard of Overhydration in Treatment

By W. E. Lockhart, M. D., Alpine, Texas

A healthy young widow with a history of alcoholism and two previous attempts at suicide swallowed 92 tablets of Miltown (Meprobamate) each 400 mgm., a dose of approximately 615 mgs. per kilogram. Attempts to lavage the stomach failed because of respiratory obstruction, and consciousness was lost in less than an hour. She developed a flaccid paralysis with normal heart beat and respirations. Blood pressure dropped to 70/40 and respirations increased to 26. She would not respond to stimulation, but frequent swallowing movements were noted. At 17 hours she began vomiting a bloody gastric fluid, and respiratory obstruction was so severe that a tracheostomy was done. At 40 hours she awoke and expressed a desire not to live and was carried by ambulance to a psychiatric hospital.

Rationale

We had no previous experience with suicidal dosage of Meprobamate; so the rationale of treatment was to maintain an air-way, support the fallen blood pressure, promote diuresis and protect the liver with dextrose and vitamins. Continuous nasogastric suction was attempted but was ineffective because of mucus. Despite the fact that she had probably swallowed a volume of water with the tablets and that in the first forty hours we gave 5,000 cc of dextrose in normal saline and 2,000 cc of dextrose in water, the kidneys produced only 300 cc. of urine, which was normal on analysis. Thus, in our efforts to support the circulation and renal function we inadvertently over-loaded the patient with water and sodium.

Interstitial Fluid

It is probable that during the flaccid paralysis a considerable volume of interstitial fluid was contained in the relaxed muscles; and as soon as muscle tone was restored this fluid was returned to the circulation, which became over-loaded and resulted in pulmonary edema. Despite every effort to overcome the pulmonary edema the patient died 117 hours after taking the Meprobamate.

Summary

In the lay mind tranquilizing drugs are "sleeping pills" and will be often used as suicidal agents. Meprobamate is not very toxic, and treatment should be conservative. The hazard of over-loading the circulation with water and sodium should be avoided. Meprobamate is effective for psychic tension of alcoholism but is not effective in depression.

BOOKS

The Truth About Cancer

Charles S. Cameron, M. D.
Medical and Scientific Director,
American Cancer Society
Prentice-Hall, Inc., Publishers - ($4.95)

For many years there has been considerable controversy among doctors about the mass education program of the American Cancer Society. A recent survey by the National Opinion Research Center shows that, while the average family physician has reservations about some aspects of the cancer program, he is generally sympathetic with both the content and the method of its educational activities. This survey, the results of which were published in the Journal of the American Medical Association, March 31, 1956, reveals that most physicians feel that it is very important for the public to be better informed than it is about cancer. For the first time, a book has been published that can supply this information.

In this unique book, *The Truth About Cancer,* the author makes the terse statement that the truth about cancer is that cancer is twice as curable as the present cure rates show. The author emphasizes that ignorance and fear are more deadly than cancer itself. 80,000 lives could be saved each year, if fear and ignorance could be eliminated. The culpability of the physician who delays treatment, or censure of the physician who ridicules the routine physical examination, is not included.

Complete Index

The text, comprising 268 pages, with a complete index, discusses in a very simple, and yet authoritative and enlightening manner, many of the problems that confuse the layman about cancer. A definition and description of the various types of malignancy are discussed in a plain and forthright manner. The author discusses various known causes of cancer, and describes in considerable detail the types and phases of research that are being carried out at the present time.

One chapter includes a discussion of some of the common misconceptions about cancer; and there is a very excellent discussion about cancer quacks, and how they function, and why so many persons with cancer are victimized each year.

The text is well illustrated, and there are several excellent color reproductions.

This is the book that you can recommend to your patients as an authoritative and unique presentation of facts about cancer.

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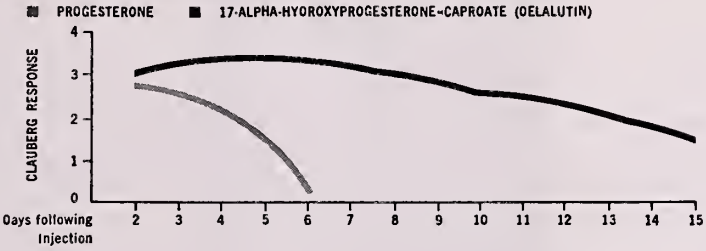
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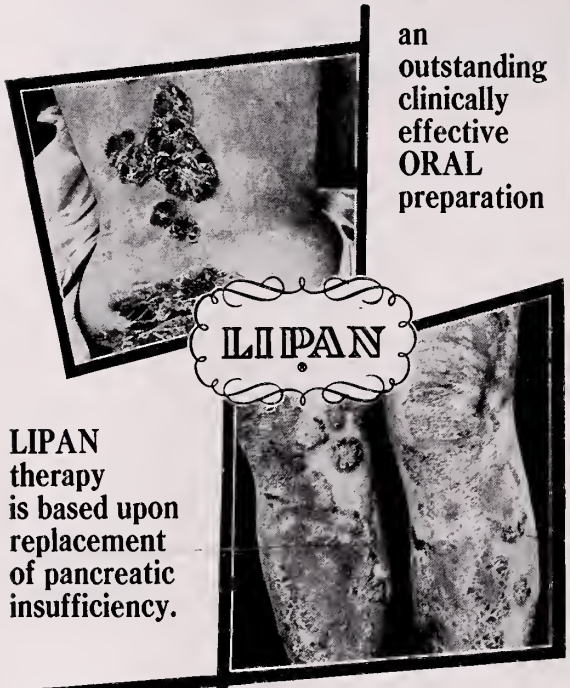
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II. False Dizziness



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2. Inability to Walk a Straight Line

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1. Swartout, R., III, and Gunther, K.: "Dizziness:" Vertigo and Syncope, GP *8*:35 (Nov.) 1953.

2. DeWeese, D. D.: Symposium: Medical Management of Dizziness. The Importance of Accurate Diagnosis, Tr. Am. Acad. Ophth. *58*:694 (Sept.-Oct.) 1954.

3. Kunkle, E. C.: Central Causes of Vertigo, J. South Carolina M. A. *50*:161 (June) 1954.

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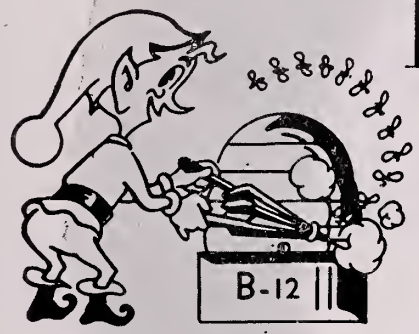
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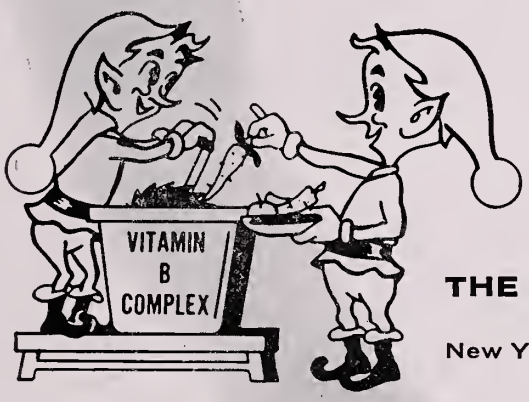


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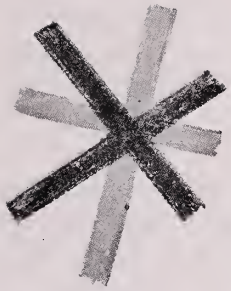
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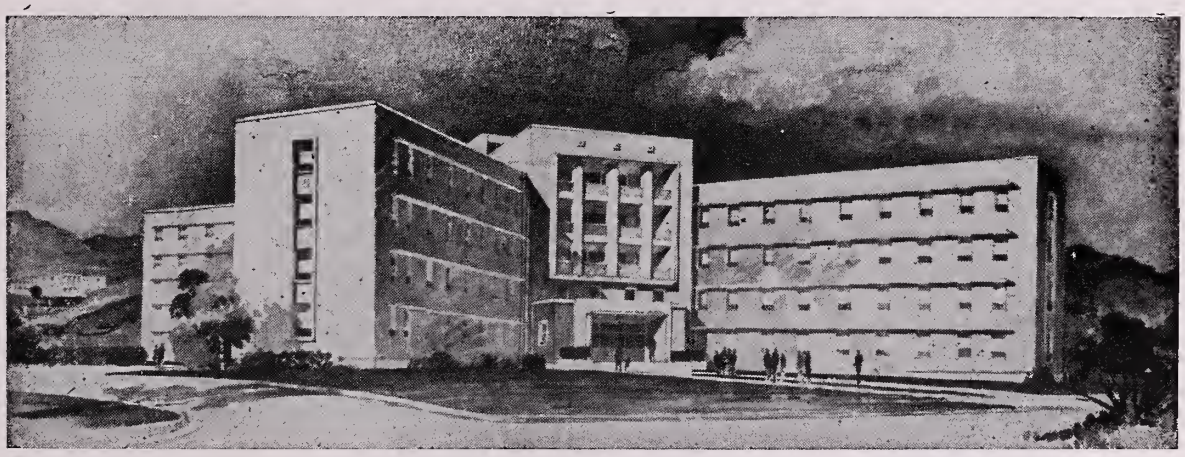
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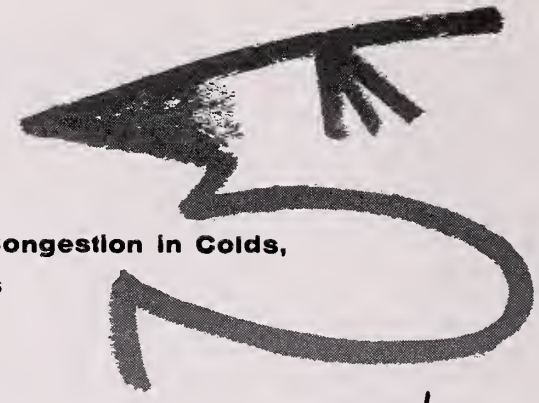
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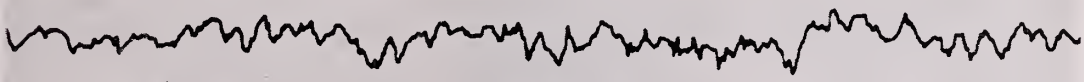
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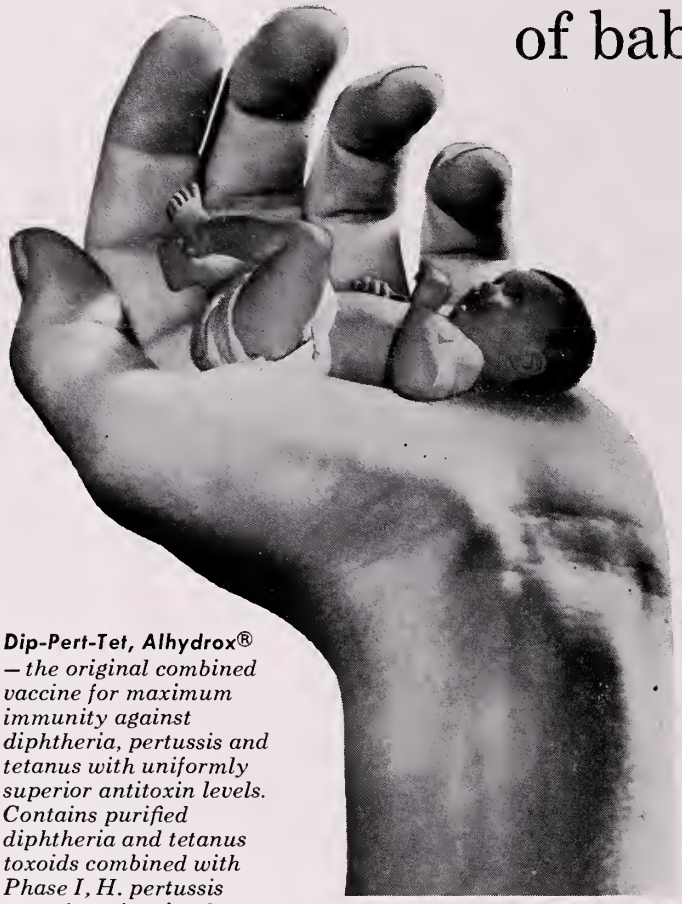
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CURRENT THERAPY

The Present Status of Antibiotics

By Chester D. Awe, M. D., El Paso*

When penicillin was first released during World War II, it proved highly effective against almost all gram positive cocci and many of the gram negative cocci and spirochetes. At first, it was carefully rationed and given in small amounts, usually from 100,000 to 300,000 units per patient.

Toward the end of the war reports were circulated which revealed that certain strains of staphylococci were becoming penicillin resistant.

Within the next five years, streptomycin, chloromycetin, aureomycin and terramycin were developed and tried in many types of bacterial infections. According to Jackson and Dowling of the University of Illinois, during 1951, various companies in the United States produced 324 tons of penicillin or approximately two million units for every person in the country.

167 Tons

During the same year, 167 tons of streptomycin were produced, enough to treat one million persons with pulmonary tuberculosis for one year. By 1951, chloromycetin, aureomycin and terramycin had been in production for only two or three years and by that time, 250 tons of these three antibiotics were produced, which was a sufficient amount to provide for about two hundred million patient days of treatment.

More than one half of all prescriptions written in 1951 were for antibiotics. Since 1951, we have had the erythromycin drugs and the newer tetracyclines. During the past five years several facts have emerged concerning antibiotics.

Highly Resistant

One is that in the larger hospitals and to a lesser extent in larger cities of England, Canada and the United States, a high percentage of staphylococci have become resistant to penicillin and, in many instances, to all of the other antibiotics.

Finland and his co-workers isolated 500 strains of staphylococci and found that 75 per cent of them were penicillin resistant. Many of the gram negative bacilli are also becoming resistant to most of the antibiotics. In the past, Professor L. P. Garrod, of the University of London, has published many articles concerning antibiotics.

Joint Meeting

At a joint annual meeting of the British and Canadian Medical Associations held in Toronto, Canada in June, 1955, Professor Garrod discussed the use and abuse of these drugs. He said that the various sulfonamides had similar antibacterial activities, whereas the antibiotics were much more selective in action, except that all the tetracyclines acted similarly.

He pointed out that it is difficult for the clinician to keep up with all the new developments, particularly the new dosage forms. There were, at that time, forty-seven different dosage forms of penicillin.

Persistent Blood Level

With regard to penicillin therapy it is better to have a persistent, even if low, blood level than a high, but short-lived, level. According to Professor Garrod, the indications for the use of antibiotics in different conditions can be divided into the absolute and the conditional.

The use of penicillin is specific in scarlet fever, lobar pneumonia, gonorrhea, and syphilis; streptomycin is effective in tuberculosis and tularemia; chloramphenicol is effective in typhoid fever; and chloramphenicol and the tetracyclines are effective in typhus and other rickettsial infections.

Conditional Group

In the conditional group the particular strain or organism may not be sensitive, as with micrococci (staphylococci) in a hospital environment, or the condition may be due to a variety of organisms. The best course in such cases is to use the most likely antibiotic, pending a bacteriological investigation. The dangers of indiscriminate chemotherapy were stressed.

The main abuses are the administration of agents to undiagnosed patients, to patients with nonsusceptible infections, to patients with trivial complaints such as colds, and to patients for prophylactic use.

Chemoprophylaxis

Dr. Garrod felt that chemoprophylaxis is, however, justifiable in major operations on the chest, abdomen,

* Dr. Awe this month is substituting for Dr. Jack A. Bernard, regular conductor of this section.

and brain, in complicated labor, and for prophylaxis in patients with rheumatic fever, but about 90 percent of the antibiotics prescribed are not justified. In a census of surgical patients more antibiotics were being given for prophylaxis than for treatment.

Apart from the waste of money if improperly used, the antibiotics have dangerous side-effects in a small number of patients. These side-effects include allergic responses, aplastic anemia, and fulminating, resistant micrococcic enteritis. Chemoprophylaxis is not needed in aseptic operations, normal labor, or ordinary dental work.

Doctor Tempted

It is regrettable that in Britian the hospital doctor is tempted to use chemoprophylaxis as a protection against litigation should any untoward incident occur. At a meeting of the Royal Society of Medicine, Professor Garrod said that penicillin was the antibiotic of choice.

He said that infections could be grouped into those that could be treated immediately with antibiotics (e. g., typhoid with chloramphenicol) and those that needed bacteriological study and control, such as infections with micrococci and gram negative organisms, which are unpredictable. Micrococci are becoming increasingly resistant to all antibiotics.

Erythromycin

As erythromycin is one of the latest antibiotics, Professor Garrod suggested that it should not be used extensively but kept in reserve as the last line of defense to combat organisms resistant to other antibiotics.

One of the most dangerous side-effects of aureomycin and terramycin is the production of a severe and sometimes fatal enteritis due to resistant micrococci.

The best antibiotic against Escherichia coli and Ps. aeruginosa is polymyxin, which may be given intramuscularly and intrathecally if necessary. It may be lifesaving in some forms of meningitis.

Professor Garrod severely criticized the use of two or more antibiotics together.

Synergistic Effect

Sometimes penicillin and streptomycin have to be given together for their synergistic effect, as in endocarditis due to Streptococcus fecalis or peritonitis after perforation of the intestine, but he doubts if there is any other genuine indication apart from these.

Dr. Maxwell Finland from the Harvard Medical School has been particularly interested for the past several years in the antibiotic resistant micrococcic (S. Aureus) infections.

He states that the percentage of penicillin resistant strains isolated from the patients in large hospitals in various parts of the world has increased steadily during the past few years.

Many Strains Resistant

In most of them, three-fourths of all such strains are now highly resistant to this antibiotic. The incidence of penicillin resistant strains of staphylococci isolated from out-patients is much lower (about one-half to one-third) than among in-patients in the hospital.

In some large cities of the United States and Great Britian about ten to thirty per cent of the strains of staphylococci isolated from the nose and throat of normal patients in the community are resistant to penicillin.

A recent study carried out by workers in the Army Medical Service Graduate School showed that micrococci isolated from cutaneous lesions in such places as tropical Mexico or British North Borneo, where there is only minimal use of penicillin, are all sensitive to penicillin in low concentrations and within a very narrow range of such concentrations.

Washington Hospitals

More than one-half of the strains from Washington hospitals were found to be highly resistant to penicillin in the same study. Studies in which the resistance of micrococci to several antibiotics has been tested simultaneously have indicated that almost all strains that are resistant to streptomycin or to the tetracycline antibiotics are also resistant to penicillin.

The situation with respect to erythromycin in some localities has recapitulated within a brief period the longer experience with penicillin.

In one Chicago hospital the intensive use of this agent in preference to others has led to an increase in the incidence of erythromycin-resistant micrococci among hospital personnel from 0 to 75 per cent within a period of five months.

High Incidence

This high incidence dropped to approximately thirty-five per cent a few months after the use of erythromycin was discontinued.

Professor Finland concludes that there is little doubt that the widespread use of antibiotics has given rise to changes in the frequency with which certain common varieties of bacterial infections are encountered, particularly in hospitals. Pneumococcic and hemolytic streptococcic infections are now relatively much less frequent than they were several years ago, and when seen they are now rapidly eradicated.

Infections Encountered

However, infections due to such organisms as Pseudomonas, Proteus and Aerobacter, the majority of which are moderately or highly resistant to most of the commonly used antibiotics, are being encountered with increasing frequency, and in some hospitals infections with Candida (Monilia) are also being encountered.

On the other hand, except as just noted, there is little evidence that most of the common pathogenic organisms other than micrococci have increased in their resistance to penicillin to any important degree.

In particular, there has been no significant increase in resistance to any of the commonly used antibiotics among strains of hemolytic streptococci, pneumococci, Hemophilus influenzae, gonococci and meningococci, and Streptococcus viridans (from cases of subacute bacterial endocarditis).

Gonococci

In the case of gonococci and group A hemolytic streptococci, this has been true even in groups of patients who have recently been under treatment with penicillin or who have been under continuous or intermittent prophylaxis with this agent.

Reports from medical centers in Western Europe and South America reveal results from antibiotic therapy almost identical to those experienced in this country and the United Kingdom.

In other countries, for example in Austria, the situation is somewhat different.

Antibiotics Unnecessary

At a meeting of the Society of Physicians of Vienna in January, 1955, Dr. L. Bohler stated that in the treatment of ordinary wounds antibiotics as a rule are not necessary, for in new wounds thorough debridement and in infected wounds the release of tension by suitable incisions are the essential factors. Since 1954 over 11,000 wounds were debrided and in over 10,000 of these, no antibiotic was used. In El Paso, the problem of superinfection up to the present time has been of minor significance.

Alert To Dangers

Our hospital pathologists are alert to the dangers of wound infections and cross infections. They have made many bacteriologic surveys involving operating room personnel and equipment. In one of our larger hospitals, nose and throat cultures of the operating room personnel revealed that twenty-five per cent of the persons studied had pure cultures of non hemolytic staphylococci which were penicillin resistant.

Conclusion

From the examples cited from different parts of the world, we may conclude that:

(1) In the opinion of many writers, antibiotics are too often used in cases where they are not indicated, such as the common cold, the various virus infections and in most pre-operative cases.

(2) Penicillin, streptomycin and the sulfonamides are synergistic but antagonistic to the tetracycline group. It has been shown that patients with pneumococci meningitis have a much better chance for recovery when penicillin is used alone than when used in combination with other drug such as aureomycin or terramycin.

(3) Bacterial sensitivity tests made in the larger hospitals or in homes where antibiotics have been frequently used are now of little value because of the increasing number of resistant germs, particularly staphylococci. Resistance to the antibiotics is likely to increase and greater precautions must be taken to preserve asepsis in the operating rooms.

(4) If a patient has not responded to a given antibiotic within seventy-two hours, it might be wise to change to some other drug.

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"I am all thumbs today, aren't I?"

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

By Andrew M. Babey, M. D., Las Cruces, N. M.

1. "It is right that we should examine and consider every new thing that is presented to us, but not necessarily right that we should adopt it. Most new things turn out in the end to be wrong." Sir Heneage Ogilvie; The Lancet; Jan. 21, 1956; p. 115
2. "Sciatica is nearly always due to disc protrusion; yet before discs were invented, sciaticas all got well eventually, and now the great majority get well with rest and remain relieved while they wear a belt. Operation is necessary in the uncommon case of definite root pain that cannot be relieved; but while removal of the disc will relieve the root pain, it often makes the backache worse." Ogilvie; loc. cit.; p. 117
3. "The consensus of surgical opinion today is that in cancer of the head or the body a simple short-circuiting operation will, on the average, give a longer survival. In cancer of the ampulla, however, symptoms, signs, and radiological appearances allow early diagnosis, and the results of radical surgery are excellent." Ogilvie; loc. cit.; p. 117
4. "A thing becomes orthodox only when it is considered good by the majority; and when a surgical procedure has been heard of by the majority, tested by the majority, and approved by the majority it is certainly out of date, and probably wrong." Oglivie; loc. cit.; p. 117

Billroth-I

5. "I fear that Billroth-I operation may be condemned as gastrectomy is condemned in some quarters today—not because it is a bad operation, but because it is done badly." Oglivie; loc. cit.; p. 118
6. "Unexplained fever, especially if repeated, after the injection of an organic mercurial is, in our opinion, an indication to stop giving that preparation and to use a different one. Attempts to establish the guilt of the original compound are not without risk to life." Smallwood, W. C., Matthews, H. L.; The Lancet; Jan. 21, 1956, p. 123
7. "Primary hyperaldosteronism was first described by Conn in 1954, and during the past eighteen months about a dozen similar cases have been recognized, although not all have yet been reported in the medical press. The cause of the condition is an adrenocortical tumor—usually an adenoma but ocassionally a carcinoma—which secretes excessive amounts of aldosterone. The clinical picture is characterized by intermittent muscular pains, cramps, weakness, and paralysis; hypertension; renal dysfunction shown by polyuria, nocturia, and albuminuria; and in some cases by pins-and-needles and tetany. The laboratory findings are hypokalaemia, mild hypernatraemia, alkalosis, and inability of the kidney to secrete an acid urine after a loading dose of ammonium chloride." The Lancet; Jan. 21, 1956; p. 212
8. "Most definitions of diabetic neuropathy say that the symptoms include not only pain and paresthesias but usually mention postural hypotension and edema as if they were among the very common features in diabetic neuropathy, which, I think, is not true." Howard Root; American Practitioner; Feb. 1956; p. 292

Neuropathic Conditions

9. "Some neuropathic conditions, which seem to be limited to the extremities, often are accompanied by emotional and cerebral symptoms. At one time we tested our diabetic patients in the hospital with ordinary memory tests. We found that patients when first admitted with uncontrolled diabetes gave poor responses to such simple tests as remembering telephone numbers, and yet ten days or two weeks later did much better." Root; loc. cit.; p. 293
10. "The heart failure in salt-water drowning is almost certainly due to prolonged and severe myocardial anoxia." K. W. Donald; British Medical Journal: July 16, 1955; p. 156
11. "Respiratory failure (in drowning) occurs some time before irreversible circulatory failure in a high proportion of cases." Donald; loc. cit.; p. 156
12. "If a victim has flooded his lungs with fresh water and yet has been sucessfully resuscitated then it would appear certain that he would be suffering from plethora, haemodilution, electrolyte disturbance, and pulmonary oedema. Further, he would be in danger of severe renal damage from the presence of freely circulating haemoglobin." Donald loc. cit.; p. 157
13. "The findings described would suggest that submersion in fresh water is far more lethal than in salt water, yet reliable figures are sadly lacking." Donald; loc. cit.; p. 157

No Time To Waste

14. "It is obvious that not a second, literally not a second, can be wasted. Artificial respiration of some sort must be started as the victim is landed, even at the risk of other injuries. No time should

be wasted in clearing the airways, loosening clothes even at the neck, feeling the pulse, listening for the heart action, draining of the lungs, or selecting of suitable slope so that the head is down. If another person is available then he can clear any material from the mouth and check the tongue position, but such manoeuvers must not interfere with unremitting artificial respiration." Donald; loc. cit.; p. 158

15. "Detailed clinical examination before at least 15 minutes efficient artificial respiration has been carried out may well be a lethal procedure, and it is possible that a person with medical knowledge may even constitute a threat in this respect. If the victim has irreversible circulatory failure then nothing has been lost by delaying the diagnosis. If he has only respiratory failure then prompt and continued artificial respiration may save his life." Donald; loc. cit.; p. 158

16. "There will be the victims with irreversible circulatory failure due either to ventricular fibrillation (fresh water) or to anoxic myocardial failure (salt water) ; these cannot be saved by artificial respiration." Donald; loc. cit.; p. 158

17. "There will be those who are in respiratory failure without circulatory failure. Those from fresh water have probably less than a minute before the fatal event of ventricular fibrillation, and although such people may ocassionally be snatched from the jaws of death it must be a very rare event. Nevertheless, it emphasized that some chest movement should be initiated almost as the victim is brought out of the water. In salt-water drowning, where only respiratory failure has occurred, there may be a longer period before circulatory death occurs in some cases, but in animal experiments this period can be very short indeed." Donald; loc. cit.; p. 158

Extreme Urgency

18. "The extreme urgency of the situation makes it unwise to think in terms of rocking stretchers, oxygen therapy, or "stimulating" injections. Manual ventilation is as efficient as any portable mechanical apparatus, and even though the apparatus may be brought to the subject it is distracting and the issue is being decided already." Donald; loc. cit.; p. 158

19. "The medical man may arrive after a few minutes' artificial respiration has been carried out, and those present will look to him desperately for expert advice and treatment. He must not stop artificial respiration to examine the chest unless it has continued for at least fifteen minutes. If the heart action is still present then continued artificial respiration is a desperate necessity." Donald; loc. cit.; p. 158

20. "It would be too onerous a responsibility to place a time limit on the resuscitation of drowned persons in general terms, and the decision on how long artificial respiration should be continued must rest with those present on each occasion. As a general rule it should continue for at least an hour. There may not be such miracles, but it is wrong to deny the possibility of one and resist the perhaps hopeless but admirable desire to turn tragedy into triumph. It should, however, be emphasized again and again that it is in the first few seconds after the body has been recovered that prompt action may save life." Donald; loc. cit.; p. 159

Biliary Colic

21. "Clinically, biliary colic usually is felt in the epigastrium and later may localize in the region of the gallbladder. The pain may extend to the right subscapular region, or the midline of the back, or into the chest, or to the left upper abdominal quadrant, or even into either lower abdominal quadrant. Occasionally, the pain may be felt entirely in the left upper abdominal quadrant. It may begin in the back and be projected anteriorly." James F. Weir; Vet. Admin. Tech. Bull.; Sept. 29, 1953; Section 10-92; p. 9

22. "The distended gallbladder seldom is larger than a pear but it may attain the size of a football." Weir; loc. cit.; p. 9

23. "Intrahepatic stones alone are not of common occurrence, but, if multiple small stones are present in the common duct, stones usually are found also in the hepatic ducts." Weir; loc. cit.; p. 9

24. "Jaundice may be absent in a surprising number of cases and this may give a false impression that there is no stone in the common duct . . . . However, given a stone in the common duct, jaundice tends to occur sooner or later. Although it usually follows colic, jaundice may begin painlessly. It may be deep and persistent, usually because of impaction of a stone in the lower end of the common duct. Weir; loc. cit.; p. 11

25. "Paucity or absence of symptoms does not necessarily indicate minimal pathologic change in the gallbladder. Extensive inflammatory changes may be present in the absence of significant symptoms. The number and size of the stones may not be adequately demonstrated by the cholecystrgram. A single stone only may be visualized; yet many small stones, not visualized may also be present. Small stones tend more easily than do large ones to become impacted in the cystic duct or to migrate to the common duct." Weir; loc. cit.; p. 16

Excellent Results

26. "Removal of the gallbladder which contains stones that have been producing colic gives excellent results in 85 - 90 per cent of cases. Mild dyspepsia may persist in some cases . . . Removal of common duct stones gives relief in 75 - 80 per cent of cases. Possibly 10 to 15 per cent of patients continue to have some indigestion and

upper abdominal discomfort. A small percentage (perhaps 5 per cent) have recurring attacks of colic and, in an occasional case, further stones may form in the common duct and further surgical operation may be necessary." Weir; loc. cit.; p. 17

27. "Estimations of the concentration of barbiturate in the urine are of no clinical value, because large doses of barbiturate depress urine secretion. The short-acting and medium-acting barbiturates, being largely destroyed in the body, appear unchanged in only low concentration in the urine, and the presence in urine of other chromogens interferes with the accuracy of the estimation." The Lancet; Feb. 18, 1956; p. 293

28. "It cannot be stressed too strongly that a full epileptiform convulsion is common in quite normal individuals if a syncopal attack is severe and prolonged. A history of injury and loss of sphincter control is therefore less useful than the textbooks would have one believe. The crucial measurement during the attack is the arterial pressure; this is increased in epilepsy and is, of course, greatly decreased in syncope." Sharpey-Schafer; Brit. Med. Journ.; March 3, 1956; p. 509

Aldosterone

29. "Aldosterone proves to be from 50 to 120 times as potent as D. C. A. in controlling the excretion of sodium and potassium by the kidney. Its discovery explains the established clinical fact that, whereas in Addison's disease severe dehydration soon results from excessive loss of sodium in the urine, this does not occur in hypopituitarism when adrenal activity is also very low. In Addison's disease the morbid process destroys the cortical cells which produce aldosterone, thus causing the sodium loss and the potassium retention, but in hypopituitarism production of aldosterone is not affected because it is not dependent on corticotrophin (A. C. T. H.) as is the production of hydrocortisone." Brit. Med. Jour. March 17, 1956; p. 618

30. ". . . . severe potassium depletion, for this alone is now known to damage the kidneys." loc. cit.; p. 618

31. "Thus the interesting situation has become clear that two strikingly different types of clinical picture are both associated with excessive production of aldosterone. The one due to tumour, and clearly primary, is associated with severe loss of potassium; the other, probably secondary, is found in a variety of conditions with excessive retention of sodium and is not associated with appreciable potassium disturbance." loc. cit.; p. 619

32. "Professor McMichael said that the chance of the malignant form developing in a patient with hypertension was about 1 in 200." The Lancet; April 21, 1956; p. 504

Abstract

Feinblatt, T. M. & Ferguson, E. A. Jr., Timed-disintegration capsules, an in vivo roentgenographic study, *New England J. Med.* 254;940 (May 17) 1956.

An in vivo roentgenographic study of timed-disintegration capsules showed that, contrary to the common impression, the contents are scattered widely throughout the length of the gastro-intestinal tract before the individual particles disperse or dissolve. The popular belief that the mass of the capsule contents remains in a single blob, based on an artist's conception, is shown to be erroneous.

In the present study four different kinds of Nyscaps, (Nycso Timed-disintegration capsules), containing radiopaque barium sulfate 5 mg. (substituted for the usual active medication) were used. The first type was for immediate disintegration, the second for timed disintegration in about two hours, the third in about four hours, and the fourth in about six hours. Roentgenograms were taken immediately after ingestion and repeated in two, four, six, eight, and ten hours.

The roentgenographic technique demonstrated a longer disintegration time than the modified U. S. P. method. The disintegration time was two to four hours as compared with two hours by U. S. P. technic, four to six hours as compared with four hours, and six to ten hours as compared with six hours. It is believed that the roentgenographic technic offers a more accurate picture because it is an in vivo method. The great convenience of the timed-disintegration capsule makes it an ideal method for the administration of drugs usually given in three divided doses.

CLINICAL NOTES FROM GRAND ROUNDS

These notes are abstracts of opinions expressed by staff members during case presentations at the Friday Grand Rounds of the Pratt Diagnostic Clinic—New England Center Hospital.

Malignant exophthalmos may develop before there are other signs of hyperthyroidism; it may parallel the clinical course of hyperthyroidism; or it may appear for the first time after hyperthyroidism has been brought under control. It never occurs without some association with hyperthyroidism. It has been theorized in the past that malignant exophthalmos was caused by an excess of thyrotropin, but there is no proof to support this concept. Therapy with thyroid extract which suppresses thyrotropin is probably of no value. Most cases progress rapidly up to a point when spontaneous recovery begins. Small doses of x-ray treatment to the orbits or pituitary fossa may hasten recovery in some cases. It is important to protect the corneas by use of goggles and protective ointments. Because small amounts of excess fat or fluid in the orbits may be critical, a low calorie, low sodium diet should be prescribed.

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL
June 21, 1956

FREDERICK P. BORNSTEIN, M. D., EDITOR — CASE NO. 607
PRESENTATION OF CASE BY DR. JOE C. CARTER

HISTORY

Dr. M. Nathan Kleban:

A 47 year old Latin-American housewife entered this hospital on December 13, 1955, because of an illness of two weeks duration.

The patient experienced epigastric distress, right lower abdominal quadrant and rectal pain associated with defecation, an increase in number of daily bowel movements with stools which were small, hard, and black with bright red blood on the surface.

Anorexia, belching, abdominal swelling and yellow discoloration of the eyeballs occurred.

There were no chills, feverishness or nausea. There was no history of previous jaundice, exposure to liver toxins, injections within the recent past, or previous intolerance to fatty foods. Alcohol consumption had been generous for an unknown period of time.

Past and family history were not relevant to the present illness.

Physical Examination

The patient was an obese, jaundiced woman who appeared moderately acutely and chronically ill. T. 100, P. 90, R. 20, B. P. 116/70.

There were no spider angiomata. The skin was of a "peculiar color". Percussion note was dull and breath sounds were decreased over the left posterior lung field. Four fingers-breadth below the right costal margin a smooth, tender liver edge was felt. Palpation of the abdomen elicited diffuse tenderness. A fluid wave, shifting dullness or splenomegaly were not detected. Hemorrhoids were present. The balance of the physical examination, including pelvic and sigmoidoscopic examinations, contributed no additional significant information.

Hospital Course

Temperature elevations to 100 or 101 occurred almost daily. Rectal pain and abdominal discomfort persisted. Bright blood was present on toilet paper and in water following bowel movements. One stool was described as yellow, none as black. 600 cc. of greenish-yellow fluid were removed from the right pleural space.

An attempt at paracentesis yielded only five cc. of yellow fluid. Venous pressure was 11 cm., decholin arm-to-tongue circulation time was 15 seconds. A low salt diet was taken fairly well. Diamoz, Methiscol, and a multi-vitamin preparation were prescribed.

Penicillin and Streptomycin were administered when the patient complained of pain in her mouth and a swollen jaw. On December 31 the patient was discharged home to return after the first of the year for additional diagnostic studies.

Returns to Hospital

On January 28, 1956, the patient returned to the hospital more heavily jaundiced, with greater abdominal distension, evidence of ascites, presacral and lower extremity pitting edema, basilar pulmonary rhonchi, and a grade two systolic murmur heard at all valve areas but more intense over the mitral area.

Eleven hundred and eighty cc. of straw colored fluid were removed from the peritoneal cavity by paracentesis on one occasion, and 1300 cc. on another. Seventeen hundred cc. of straw colored fluid were aspirated from the right pleural space. The patient vomited, and was restless. She developed a fever beginning on the fifth day, became lethargic, incoherent, stuporous, bled from the mouth and nose, went into shock, then coma, and died two weeks after re-admission.

Laboratory Studies

December 13-31: Urinalysis normal except for presence of bile and absence of urobilinogen. Hemoglobin 9.0 gms. Packed cell volume 32 per cent. WBC 29,400. Stabs 13, seg. 70, Lymphs 12, monos 3, eos 2. Prothrombin time 16 seconds, 65 per cent of control. Van den Bergh 5.2 total, 4.1 direct. Cephalin cholesterol flocculation 4+ in 24 hours. Fasting blood sugar 92 mg per cent. Total cholesterol 213 mg per cent, esters 75 mg. per cent. Alkaline phosphatase 8.0 Bodansky units. Serum albumin 2.6, serum globulin 2.0. Blood urea nitrogen 11.0 mg. per cent. Stool negative for occult blood and urobilinogen. Sputum negative for fungi and acid-fast organisms. Kahn doubtful, Kolmer positive. Pleural fluid: no growth in routine culture, no AFB on culture smear. Peritoneal fluid: no growth on routine culture, 60 per cent pelys, 40 per cent lymphs.

Survey film of abdomen: Findings consistent with ascites and enlarged liver. Chest film: Right pleural effusion and displacement of mediastinum to left. Upper G. I. Series: Esophageal hiatal hernia.

January 28 - February 11: Urinalysis 1.007, acid, albumin 3+, sugar negative, WBC 20-30, RBC 15-20, bile positive, urobilinogen negative (on 8th day). Hemoglobin 9.0 gms., 7.0 gms. Packed cell volume 30 per cent, 22 per cent. WBC 14,700; 27,500. Stabs 7, Segs. 80, Lymphs 13. Moderate hypochromia of red cells. Kahn negative, Kolmer anticomplimentary. Van den Bergh 8.5 total, 6.0 direct; cephalin choles-

terol flocculation 2+ in 24 hours, 3+ in 48 hours. Alkaline phosphatase 8.6 Bodansky units. Prothrombin time 23 seconds, 25 per cent of control. Coombs test negative. Peritoneal fluid: specific gravity 1.003, protein 0, WBC 3, RBC 6, no growth on routine culture. Carbon dioxide combining power: 24 meq/L; chloride 95, 84 meq/L; Sodium 130 meq/L; Potassium 2.1 meq/L. No tumor cells seen on peritoneal fluid smear.

Chest film: Increasing right pleural effusion, shift of mediastinum to left, congestive failure. Abdominal films: ascites.

Electrocardiogram: Somatic tremor, low voltage, Q-T interval greatly prolonged, suggesting electrolyte disturbance.

Clinical Discussion — Dr. Joe C. Carter:

This protocol presents in a very orderly manner just about all possible positive and negative evidence for an etiological-pathological diagnosis of irreversible primary or secondary liver disease with hepatic jaundice and hepatic decompensation. But there are always pitfalls in liver disease diagnosis, even in retrospect.

Primary hemolytic jaundice is immediately ruled out by the relatively unchanging moderate anemia, the increased direct reacting bilirubin, the presence of bile pigments in the urine, and no increased urobilinogen in the urine. Rather marked elevation of the urobilinogen in urine is valuable in directing attention to hemolytic jaundice or acute liver cell necrosis; but all other values are so variable and difficult to interpret, that they are best ignored.

Adequate Kidney Function

There was no evidence for any primary cardiovascular or renal disease. There was adequate kidney function throughout the hospital stay. The attending physicians ruled out constrictive pericarditis.

There was nothing to point to any systemic disease, such as Lupus or polyarteritis. However, Mowry and Lundberg reported that 6 per cent of 230 cases of polyarteritis were diagnosed as primary liver disease.

All of the positive findings point to a severe diffuse disease of the liver parenchyma. The most specific evidence is: *(1)* an enlarged, smooth and tender liver; (2) increased levels of bilirubin in blood and urine; *(3)* low serum albumin and low total protein (in absence of renal disease); *(4)* low prothrombin activity that failed to respond to parenteral vitamin K. Other less specific but very important evidence is the strongly positive cephalin cholesterol flocculation test, and later the positive thymol turbidity test. Of lesser importance is the low percentage of esters and the normal level of cholesterol.

Negative Evidence

The normal total cholesterol value with the normal alkaline phosphatase values are very important negative evidence against primary biliary obstruction (either intra- or extra-hepatic), with or without biliary cirrhosis, although there is the occasional case that progresses to an ultimate pathological state that is almost indistinguishable, clinically and pathologically, from diffuse nodular cirrhosis.

The history and findings in this case are not suggestive of primary biliary tract disease. Cholesterol values in primary biliary tract obstruction tend to be elevated, and at times reach very high levels.

Alkaline phosphatase values (in the absence of bone disease) are often very informative. The normal values of the commonly used tests are:

King-Armstrong	**0-13 units**
Shinowara	**2-9 units**
Bodansky	**1.5 - 5.4 units**

I would like to give some generalized interpretations by Mellinkoff et al in a report from Johns Hopkins: *(1)* The majority of cases of obstructive jaundice will have above 15 Bodansky units, with a normal cephalin flocculation and thymol turbidity test; *(2)* 75 - 95 per cent of the cases of common duct obstruction will have values above 25 Bodansky units; *(3)* most patients with parenchymal liver disease will have elevated cephalin flocculation and thymol turbidity values, with an alkaline phosphatase value near normal or at least below 15 Bodansky units; *(4)* it appears that 15 Bodansky units is the best approximate dividing line between non-obstructive jaundice and uncomplicated obstructive jaundice.

Symptoms Present

With this severe diffuse hepatic cell disease there were ascites, right hydrothorax, and edema. About 75 per cent of the cases of ascites have their origin in portal cirrhosis.

It is said that ascites in cirrhosis is due to intrahepatic venous hypertension rather than to splanchnic venous hypertension, and that the most important factors predisposing to ascitic fluid formation in patients with cirrhosis are lowered osmotic pressure due to depleted serum proteins, particularly albumin, abnormalities in metabolism of salt and water, and more than likely a disturbed hormonal balance.

Thus we do not of necessity have to have portal hypertension in this case—but I suspect that it is present even though no esophageal varices have been demonstrated.

Congestive splenomegaly could also be present. The right hydrothorax needs explaining. It is said that left hydrothorax never originates from portal cirrhosis.

The hydrothorax could be explained by hypertension in the azygos veins from portal hypertension, or on the basis of ascitic fluid going through the diaphragm as in Meig's Syndrome.

Typical Findings

At times primary and metastatic neoplastic diseases of the liver can produce just about all of the typical findings of portal cirrhosis. However, to be really

typical, there should be a diffuse spreading of very small (almost microscopic) nodules.

Hepatomas occur in about six per cent of all cirrhotic livers. They may be grossly nodular and easily distinguished from cirrhosis. Others can produce a picture that is impossible to distinguish from portal cirrhosis, except by liver biopsy.

A rare cholangioma can do the same thing, but is more likely to produce a picture of biliary cirrhosis for sometime. Metastatic lesions from the biliary tract, the pancreas, the gastro-intestinal tract, and other sites will often be confusing, but they usually present a good bit of evidence of obstructive type of jaundice or cirrhosis.

In this case a search was made for all possible sources of any primary neoplasm.

They were apparently quite concerned about an alveolar cell carcinoma in the right lung, and justly so, for a small carcinoma at the periphery of the lung certainly can spread to the liver and produce a portal cirrhosis syndrome. However, I think they have adequately ruled out any malignancy. No tumor cells were found in the transudates.

Down Hill Course

The history of this case suggests alcoholic or nutritional hepatitis rather than viral or toxic hepatitis. The down hill course in the face of adequate supportive treatment; the low proteins and unresponsive prothrombin activity suggest severe hepatic decompensation.

Astute therapy kept the electrolytes well in balance up to a few days before death, when a low potassium was suspected and an electrocardiogram ordered. A few days later a K level was found to be low.

The electrocardiogram was interpreted by Dr. Appel without benefit of clinical information, and we will ask him to review the EKG in the discussion of the case.

Dr. Saul B. Appel:

We see a lot of electrocardiograms like this on the service here and it is really very difficult to say much about them unless you have some specific information, which is one of the reasons why we ask the internes to be specific if they can, because so many things can alter the T-waves in the EKG.

In this case there was low voltage which was compatible with the generalized edema and right hydrothorax. However, the voltage over the left precordium was as expected because the heart was not separated from the electrodes by a large body of short-circuiting fluid, but the pattern in this case of the S-T segments and T-waves would fit in to one of the many patterns that can be seen in hypokalemia.

Severe Disturbance

However, wherever there is a severe disturbance in electrolyte balance, other abnormal electrolyte concentrations are liable to be found and they can affect the T-waves too, so it is very dangerous, I think, to stick your neck out and say, "This is hypopotassemia, this is hyponatremia", etc., and one isolated EKG is always a difficult thing to deal with.

If we have several of them, at least you can say whether or not a trend is going to one direction or another.

So I would encourage those who intend to use the cardiogram to assist in electrolyte control to take several of them and to put the hour of the day down as well as the date, so that there won't be any question later on as to which came first.

Dr. Charles E. Webb:

There is one statement in the protocol about the absence of urobilinogen in the urine on both occasions. Certainly in 90 per cent of the cases this means a malignant extra-hepatic obstruction, and I think it might be a factor here.

Dr. Jack C. Postlewaite:

I see a lesion in the chest X-ray, it seems to be changing and isn't a constant lesion, and perhaps there are flecks of calcium in it. With a changing lesion it could be there is some atelectasis occurring by virtue of the fluid, and everything shifted over here; but the point was made that the urobilinogen was noted to be absent, and one would wonder if there is any correlation between the lung lesion and the abdomen.

Dr. Manley B. Cohen:

The lesion that is pointed out by Dr. Postlewaite is certainly there in the first interspace of the left lung field. I think there are certain technical differences which probably account for the slight change that may appear.

Apparently the first film that we see up here is the last of the X-rays of the chest that were taken and apparently after the fluid was greatly relieved. The original pictures show a large pleural effusion with possibly some atelectasis but I rather think that the shadow seen in the right upper lobe area actually is in the fissure and represents a slight amount of fluid rather than an atelectatic portion of lung.

In the last film which shows a pleural cavity relatively free of fluid there is some haziness in the right lower lobe area but probably this is a simple residual fluid opacity overlying the lung tissue. It may, of course, represent a terminal pneumonia.

Clinical Diagnosis: Cirrhosis of the liver

Dr. Carter's Diagnosis: Cirrhosis of the liver associated with hepatic necrosis.

Pathological Diagnosis: Fatty cirrhosis of the liver associated with sub-acute hepatitis.

Pathological Discussion:

Dr. Frederick P. Bornstein:

On autopsy we found a well nourished 48 year old woman who was markedly jaundiced. The abdomen was distended and a fluid wave could be elicited. Upon opening the body cavities, 2000 cc. of fluid were removed from the peritoneum, 1500

cc. from the right pleural cavity and 400 cc. from the left pleural cavity.

Several caseous, partially calcified areas were present in the lung, obviously tuberculosis, which explains the roentgenological changes referred to by Dr. Postlewaite in the discussion.

Main Interest

The main interest in this case naturally centers around the liver. The liver weighed 1450 grams and was of soft consistency. The surface of the liver was smooth and yellow. The cut surface of the liver showed a complete loss of the normal architectural pattern; instead, one saw very smooth, pale yellow liver parenchyma of rather homogenous type.

The bile ducts were unobstructed and free of stones. My impression upon gross examination was that we were dealing with a sub-acute hepatitis.

Microscopic examination, however, revealed a far-reaching change of the architectural pattern which was caused by the proliferation of dense fibro-connective tissue, sub-division of the liver lobules, and formation of pseudo-lobules, this representing a picture of cirrhosis.

In addition, however, there were profound changes of the liver parenchyma. The individual liver cells show extreme toxic damage, lipoid infiltration and foci of necrosis.

Two Factors

To classify this picture properly we have to take two factors into consideration—the general cirrhotic pattern, and the severe change in the liver parenchyma.

It is my impression that this patient had a slowly proceeding cirrhotic process of the liver upon which a toxic hepatitis was superimposed, producing the rapid death of the patient. The gross appearance of the liver and the clinical course certainly suggest an active hepatitis.

The microscopic changes, however, show an undeniable extensive cirrhotic change in addition to the damage to the liver cells.

Dr. Carter:

Recently I had a case of typical Laennec's cirrhosis, autopsied at Hotel Dieu, with onset of edema and ascites. The patient lived about six weeks. There was much less inflammatory reaction in this case at autopsy. The proteins were very low, it was merely a liver decompensation.

Perhaps there were other things concerned, because we had a very high white count, and we had a high white count in this case and that is why I ignored that. I would like to say something about the question Dr. Webb brought up.

I think perhaps his remarks could be a little misleading because I don't believe the value of urobilinogin in the urine is of any significance unless you get a daily test for 5 or 6 days. I don't know how you can make a diagnosis to differentiate the ultimate change between Laennec's cirrhosis and a post-necrotic cirrhosis.

Dr. Bornstein:

As to the question of post-necrotic cirrhosis; it is not too common a thing. The nodules there are actually a regeneration of liver tissue; the nodules are composed of young, vigorous, regenerating liver cells. In this particular case, this liver is particularly unusual in the lack of any regenerative activity. All you have here is toxic damage and no regeneration whatsoever.

MEETINGS

Southwest Ob-Gyn Meet Scheduled in Tucson

Speakers for the annual meeting of the Southwest Obstetrical and Gynecological Society meeting, to be held in Tucson November 12 and 13, 1956, have been announced by Dr. Hollis H. Brainard, Tucson, president of the Society.

Bayard Carter, M.D., Professor of Obstetrics and Gynecology, Duke University.

Franklin L. Payne, M.D., Professor of Obstetrics and Gynecology, University of Pennsylvania.

Ralph A. Reis, M.D., Professor of Obstetrics and Gynecology, Northwestern University.

E. Stewart Taylor, M.D., Professor of Obstetrics and Gynecology, University of Colorado.

CLINICAL NOTES FROM GRAND ROUNDS

These notes are abstracts of opinions expressed by staff members during case presentation at the Friday Grand Rounds of the Pratt Diagnostic Clinic—New England Center Hospital.

In some cases of subacute bacterial endocarditis the diagnosis may be very difficult because repeated blood cultures are negative. In these, arterial cultures may be taken or the amount of blood usually cultured may be doubled. Even so, cultures may remain negative, possibly because the endocarditis occurs on the tricuspid or pulmonic valves. When continued fever, embolic phenomena, a cardiac murmur and splenomegaly exist without other explanation, antibiotic treatment will have to be instituted without a positive diagnosis. In suspected cases, treatment should be instituted with 1 million units of aqueous penicillin every six hours plus 1 gm. of equal parts of streptomycin and dihydrostreptomycin once daily. The minimum period of treatment is four weeks. Improvement should be noticed within a week and is marked by return of fever to normal, increasing appetite and weight gain.

ORIGINAL ARTICLES

The Management of Viral Hepatitis*

By William I. Coldwell, M. D., El Paso

Since World War II, there has been a marked change in the knowledge and management of viral hepatitis. Although the disease has been recognized in the medical literature for many years, much progress has been made from the previous concept of a benign catarrhal jaundice due to a mucous plug in the common duct, to the present knowledge of the serious sequelae of chronic hepatitis and cirrhosis which may result.

The large number of soldiers with the disease in epidemic form and with complications, made it necessary to devise more sensitive and simpler tests to detect low grade liver impairment. Such liver disease can be diagnosed only by the use of the more sensitive function tests indicating liver cell damage. The new concept of hepatitis without jaundice, was recognized, requiring the use of these tests in diagnosis.

Two Types

The syndrome, viral hepatitis, includes both infectious hepatitis and homologous serum hepatitis. Both are produced by hepatotropic, filtrable viruses causing parenchymal liver damage. In many cases, the diseases cannot be distinguished.

Infectious hepatitis is characterized by an abrupt onset with a preceding prodromal period of fever above 100 degrees F., chills, malaise and anorexia, a latent period of about a week, followed by the development of icterus and other signs of liver disease. The incubation period averages three to six weeks.

Homologous serum hepatitis is characterized by an insidious onset with fever below 100 degrees F. and with absence of other symptoms of infection. The incubation period is usually between two to five months.

Infectious Hepatitis

Infectious hepatitis is spread by oral ingestion of fecally contaminated material. Homologous serum hepatitis is transmitted entirely by parenteral introduction of the virus. This may include blood, plasma, serums, plasma fractions, local use of blood or human thrombin topically, and inadequately sterilized needles, syringes, lancets, etc. used in any skin puncture. Among the earliest recognized epidemics was that following contaminated yellow fever vaccine in World War II.

Specific bacteriological and serological diagnosis of hepatitis cannot be made. A sound evaluation of the history, course and physical findings is of utmost importance in the differential diagnosis of jaundice, and in many cases a definitive diagnosis can be made clinically.

*Presented at Texas District One Medical Association Meeting, Pecos

However, the determination of the cause of jaundice is rarely a medical emergency and injudicious surgery performed on a patient with non-obstructive jaundice is never helpful and usually deleterious. In those patients in whom there is reasonable doubt clinically, the liver function tests are essential.

Important Points

The important clinical diagnostic points in hepatitis are infectious onset, lack of pain, or at the most a dull ache in the right upper quadrant, adenopathy, and an enlarged, smooth, tender liver early in the course of the disease. Jaundice in a younger person that appears rapidly, levels off, and clears in a month is characteristic of hepatitis.

In devising a group of liver function tests, the multiplicity of functions of the liver must be considered. No one test can be completely accurate. One test may give normal results while others may reveal marked impairment. Also, the functioning ability of the liver is constantly changing so that repeated tests are necessary to obtain an index of improvement or failure in the liver.

Memory Refreshed

To refresh your memory concerning the physiology of the liver and bile metabolism, bilirubin is a derivative of hemoglobin liberated from broken down red blood cells. This liberation takes place in the reticulo-endothelial system in various parts of the body including the bone marrow, spleen, lymph glands and connective tissue, including the liver. These tissues are responsible for the extra-hepatic formation of bile pigment, or bilirubin.

Urobilinogen is formed in the bowel as a result of the action of intestinal bacteria on bilirubin. A portion of it is absorbed into the portal system and the normal liver removes it. In the presence of liver disease, large amounts of it are allowed to escape into the urine. In hepatitis, the liver cells are damaged and unable to remove bilirubin from the blood and excrete it into the bile ducts. This leads to an accumulation of bilirubin in the serum and the clinical condition known as jaundice when the excess bilirubin diffuses into the tissues.

Early Tests

The most important early tests in hepatitis are:

1. Serum bilirubin or icteric index. The former is much more accurate and gives evidence of liver disease prior to appearance of frank jaundice. Normal total serum bilirubin is 1.0 mgm. or less.

2. Bromsulfalein excretion. In the absence of jaundice, this test is of value in diagnosis of early liver disease. The dye is given I. V. in the dose of 5 mg./kg. body weight and a single 45 minute blood specimen is drawn. Over 5 per cent retention of the dye is abnormal.

Other Tests

Tests which become abnormal later include:

1. Thymol turbidity. This and the following tests depend on changes in the serum globulin fraction, and indicate liver cell damage. Normal reading is none to five units.

2. Thymol flocculation. Any reading above two plus in 48 hours is abnormal.

3. Cephalin flocculation. Any reading above two plus in 48 hours is abnormal. Many other tests of this type have been devised, but these are the ones I have found most practical. Other tests very helpful if there is difficulty in the diagnosis include:

Further Tests

1. Urinary urobilinogen. Any increase in this test is in favor of hepatitis since it cannot be formed in the presence of complete obstruction of bile. Normal reading is up to one to twenty dilution or one to two Erlich units in a two hour specimen.

2. Alkaline phosphatase. If above 15 Bodansky units, it favors obstruction. The range between five to 15 units may be found in hepatitis.

In an occasional case of early hepatitis, there may be patients whose tests give evidence of obstruction as well as liver cell damage. These are thought to be due to intra-hepatic biliary obstruction and the tests indicating obstruction become negative if followed serially, while those indicating liver cell damage, persist positive. Also, acholic stools often are present early in hepatitis but should change to normal within a few days. This is due to the same mechanism as noted before.

Management

The management of hepatitis, once the diagnosis is established, is as follows:

Rest. Bed rest is indicated because blood flow through the liver is altered in patients with liver disease. Distention of the liver occurs and water balance, as revealed by both decreased urine output and by water tolerance tests is impaired. Rest should be continued until all liver enlargement has subsided, and ideally, until all liver function tests are normal.

However, the thymol turbidity test may be persistently elevated and some activity can be allowed while it is still positive but improving. Graduated exercises are indicated with a longer period of convalesence if the occupation requires long standing or any physical effort. Generally a period of several weeks of complete bed rest plus several more weeks of increasing activity is indicated.

Tests

Tests, especially the bromsulfalein retention should be made at intervals to guide progress. Some authorities allow ad lib activity when the patients feel like it. I usually allow bathroom privileges at the start unless critically ill.

Diet. Early in the disease, complete anorexia is the rule and five to ten per cent glucose, 2000 cc. daily with the addition of a potent B complex and Vitamin C is necessary. Tube feedings are occasionally needed but not well tolerated by most patients. Usually, within one week, intravenous fluids can be discontinued as the appetite returns, and soft frequent oral feedings of cooked cereals, milk, soft boiled eggs, tea, toast, jelly, jello, applesauce and soups are begun. As soon as possible, a full diet of Carbohydrate-350 grams and Protein 150 grams should be used. Fats are given ad lib to allow the diet to be palatable. Formerly, low fat diets were used but patients will usually individually regulate the amount of fats ingested due to some tendency to intolerance to them. Additional sweetened juices and hard candy are added to the diet.

Pure Vitamins

Moderate amounts of pure vitamins orally insure an adequate supply. These should not exceed Thiamin 500 mgm., Nicotinamide 1000 mgm. and Riboflavin 300 mgm. daily. Crude liver extract two cc. daily intramuscularly provides a good source of Vitamin B complex avoiding the possible toxic effects of large doses of pure vitamins, particularly Nicotinic acid parenterally. Brewer's yeast tablets provide an economical source of oral Vitamin B.

Constipation is usual and should be managed with milder laxatives as milk of magnesia. Antacids and antispasmodics may be used for symptomatic relief.

Avoidance of alcohol and drugs that are detoxified by the liver such as morphine, sulfonamides and short acting barbiturates, is important.

Lipotropic Substances

The use of lipotropic substances, such as choline, methionine, betaine, and inositol is debatable. It is doubtful if they are necessary in early hepatitis and may overload the stomach to the exclusion of the more important nutritional elements.

Vitamin B-12 in 1000 mcgm. doses has been reported by some to be of value and shorten the course, but routine use is not indicated.

Antibiotics, especially aureomycin, have been used in the more severe cases with apparent good results, but should not be used in mild cases because of adverse affects on the appetite and frequent disturbing effect on the intestinal flora. They are indicated for secondary infections such as the respiratory and urinary tracts. In severe cases, the dose is 40 mg./kg. body weight intravenously in divided doses daily.

Other Treatments

Other treatment used has included large doses of ascorbic acid and ACTH and cortisone. Gamma glo-

bulin is of no value in treatment, only in prevention which will be discussed later.

A small percentage of cases will present the picture of severe acute, hepatic insufficiency. These were formerly known as acute yellow atrophy and are now known to be a severe fulminating form of viral hepatitis. Here, the prognosis is quite grave. The patient shows irritability and mental confusion, leading to stupor and true coma. Jaundice progressively deepens, fluid retention occurs, with oliguria and a decrease in liver size. Skin and mucous membrane hemorrhages are a terminal sign.

Unsatisfactory

As is to be expected, treatment is unsatisfactory. I usually restrict protein intake to at least 1 gm./kg./day. Sodium restriction is also important. Oxygen, blood transfusions, and general supportive therapy is indicated.

Often hypokalemia occurs and addition of parenteral potassium is necessary. An experimental form of treatment recently advocated is the use of glutamic acid. The mechanism is that it binds ammonia to form glutamine which is metabolized without liberating ammonia. ACTH and cortisone are used in these cases with some good results. As in other illnesses they cause a decrease in fever, jaundice and anorexia but may mask progressive liver failure.

Follow-up

The follow-up of viral hepatitis is both clinical and laboratory. After resumption of activity, twice a month examinations for a period of three months should include weight, general appearance, liver size and palpation for splenomegaly. Laboratory studies include serum bilirubin, at least until normal, bromsulfalein and any other tests that may have been persistently positive. Rechecks should be made at three months and six months following the return of all tests to normal.

A small percentage of acute hepatitis goes into a chronic phase. This is diagnosed if clinical and laboratory evidence of hepatitis persists four months after onset. Predisposition to the chronic phase includes inadequate bed rest and treatment early, use of alcohol, intercurrent infections, older age at onset, previous liver disease and pregnancy. The prognosis is quite guarded.

Many cases clear completely while others go on to a relentlessly progressive cirrhosis that defies all the usual treatment. The treatment of chronic hepatitis is essentially that of cirrhosis and will not be considered here. If there is liver enlargement, a needle biopsy may aid in the follow-up of chronic hepatitis and early cirrhosis.

Prevention

The prevention of infectious hepatitis is that of avoidance of fecal contamination of food and water. Care should be taken with the excreta and blood of known cases. The prevention of homologous serum hepatitis is the avoidance of needle innoculation with infected blood or blood products.

The same syringe should not be used for multiple injections of different individuals even if the needles are changed, due to the possibile aspiration of small amounts of infected serum or blood. As there is no definite means of inactivation of whole blood or serum, these should be used with the knowledge that hepatitis may result at any time. Also there is no means of detecting infected blood, as even in well screened donor groups, from 0.1 - 0.5 per cent of cases result.

Carriers

It is thought that completely asymptomatic carriers with true negative histories may exist. Pooled plasma offers the greatest source of infection. If plasma is stored at room temperature for six months, nearly all the hepatitis virus is destroyed. None of its properties except that associated with blood clotting is affected by this storage. It is then safe to lyophilize and freeze it as usual. It is best to use dextran, albumen, or glucose and water instead of blood products except when real indication for the latter exists. The mortality of serum hepatitis is as high as 10 per cent in some series and the resulting morbidity from chronic hepatitis and cirrhosis is much higher.

Gamma Globulin

Gamma Globulin. Protection against infectious hepatitis but not serum hepatitis will result if .06 cc./lb./ body weight is given more than one week prior to the expected onset of symptoms, or within the first seven to ten days following exposure. This is chiefly useful in large families or institutions or in debilitated or pregnant individuals known to have been exposed.

Summary

1. Viral hepatitis, including infectious hepatitis and homologous serum hepatitis has become a more severe disease with more sequelae in recent years.

2. Many liver function tests have been devised to aid in the diagnosis and treatment.

3. Treatment consists chiefly of diet, rest, vitamins, and in selected cases - other specific measures.

4. Prevention includes adequate sanitary measures, care in the use of blood and blood products and the use of gamma globulin in suitable cases.

CLINICAL NOTES FROM GRAND ROUNDS

These notes are abstracts of opinions expressed by staff members during case presentation at the Friday Grand Rounds of the Pratt Diagnostic Clinic—New England Center Hospital.

Patients with cold hemagglutinins in very high titers occasionally develop acrocyanosis and peripheral vascular symptoms upon exposure to cold because of intravascular agglutination of red cells. More serious internal trouble does not occur because the process is rapidly reversible at body temperature.

Clinical Experience with a New Sedative*

By Walter Z. Baro, M. D., Azusa, California

Sleeplessness, anxiety, excitement and depression are symptoms frequently seen in general practice as well as in the practice of psychiatry; and, although tremendous progress has been made in the fields of drug therapy and psychotherapy, these disturbances appear to be more to the forefront. While every effort should be made to determine the etiology of these most often distressing symptoms some form of therapy is indicated in order to place these patients at ease and more receptive to treatment.

The list of drugs available for the treatment of insomnia and anxiety is too long to discuss here; but while some of these agents have proven useful, they leave much to be desired.

Interesting Combination

More recently, my attention was drawn to an interesting combination of drugs known as Plexonal.* Baer (1) reported his observations with this combination for the treatment of insomnia and anxiety in 133 cases. He found that the addition of Dihydroergotamine to the three barbiturates and scopolamine, potentiates the sedative effect resulting in a more specific action. Furthermore, smaller doses of barbiturates are needed to give the same effect and the combination of the barbiturates is better tolerated. He also found that the presence of Dihydroergotamine in this combination made it possible to reduce the amount of scopolamine considerably and yet the hypnotic effect was of longer duration and more profound. Rothlin (2) has shown that Dihydroergotamine exerts a central sedative effect, analagous to that of ergotamine, as well as a stronger peripheral adrenosympathicolytic effect.

Sedative Effect

Pritzker (3) and Schneider and Wiemers (4) found that Dihydroergotamine exerts a sedative effect in certain forms of psychomotor excitement but in higher doses than are usually required in autonomic and psychotic disturbances. Boss (5) employed this combination for about two years with excellent results and without side effects. Binswanger (6), Schneider (7) and Laberke (8) reported gratifying results with the preparation in a rather large number of patients as a hypnotic and sedative. Kowalsky (9) observed the effects in 149 patients. He refers specifically to the effectiveness after deliveries and operations, with favorable results in the convalescence. Scherer (10) used the combined drugs as a hypnotic and sedative in surgical patients and Nymgard (11) reported excellent results as a hypnotic and sedative in the treatment of senile overexcitation and sleeplessness. Walter (12) treated 100 hospitalized patients for sleeplessness due to organic nervous diseases and autonomic disturbances, with a high percentage of results. Kral and Krauser (13) employed the preparation in 73 psychiatric patients and reported best results in anxiety and tension states and sympathetic over-activity.

Variety of Disorders

This report deals with 53 patients complaining of a variety of psychiatric disorders. Plexonal was used principally as a daytime sedative and the average dose was one tablet three times a day. Of the 53 patients treated, 34 cases had excellent results, eight good, nine fair and two poor. The psychiatric disorders treated consisted of eleven anxiety state cases, six situational neurosis, ten menopausal neurosis, sixteen psychoneurosis, two traumatic neurosis, two senile neurosis, three psychopathic personality with anxiety state, one with Marie-Strumpell disease, disc surgery, demeral addiction, withdrawal state, psychoneurotic depression, one with chronic rheumatoid arthritis with mild anxiety state and one with dementia praecox, simple type.

Various Barbiturates

Prior to the present study, these patients were treated with various barbiturates, but in many cases they were discontinued because of side effects. In this series of 53 cases treated with Plexonal there was one patient who was known to be allergic and developed an allergic dermatitis. One other patient experienced dizziness, but reacted in a similar manner to other sedatives, even in minute doses. I have found the preparation an excellent sedative to prepare a patient with various psychiatric disorders, for psychotherapy. All patients experienced sedation and a general feeling of well-being.

CASE REPORTS

Case No. 1

W. T. is a 27 year old married male. He came under my care in August 1953. He has been suffering from a long standing severe anxiety state. The first impression was that he may even be a schizophrenic personality. Outside of psychotherapy, he was placed on Dexamyl with only very slight improvement. He was placed on Plexonal in March of 1954, 1 tablet three times a day which gradually was reduced to 1 tablet twice a day. Within one week to ten days a definite improvement was noted. His anxiety symptoms disappeared. It was noted that three tablets a day were too much, causing an occasional dizziness. Six weeks after initiating Plexonal, the patient indicated that "he felt better than he has ever felt since his anxiety state started." He describes his well-being by stating that "he has not a worry in the world" that "he does not get upset about any-

* Sodium diethylbarbiturate, 45 mg; Sodium phenylethylbarbiturate, 15 mg; Sodium isobutylallylbarbiturate (Sandoptal), 25 mg; Scopolamine hydrobromide, 0.08 mg; Dihydroergotamine methanesulfonate, 0.16 mg. Furnished by Sandoz Pharmaceuticals

thing" that "he has begun to mix with people, which he did not do before" that "he has found new interests and that he gets along better with other people." The result in this case is excellent.

Case No. 2

K. Z. is a 52 year old white married male. He came to my attention on December 22, 1953. He was diagnosed at that time as a questionable thrombosis of the spleen and essential hypertension with severe psychoneurosis. His blood pressure ran about 170/90 until he was placed on Plexonal. Six weeks after Plexonal medication his blood pressure on both arms was 120/80. The result of this patient's case should be considered excellent.

Case No. 3

W. L. is a 25 year old white married male. He was first seen in October 1953. Diagnosis: Constitutional psychopathic inferiority with superimposed anxiety state. He was given Plexonal in March. Since the patient has been under Plexonal all his anxiety symptoms are gone and the result is excellent.

Case No. 4

E. C. is a 57 year old woman. Diagnosis: Menopausal neurosis. She was first seen the beginning of April 1954 with a very severe emotional upset accompanied by vomiting, nervousness, aches and pains all over her body and hot flashes. The combination of Plexonal and estrogenic hormone was started. The patient reported on her third visit that she felt better than she has felt in years — as a matter of fact she felt that there was no reason or necessity for seeing me. The results should be considered excellent.

Case No. 5

L. S. is a 23 year old married female. Diagnosis: Grand mal and petit mal epilepsy with severe psychoneurotic overlay — possibly causing the epileptic seizures. This patient has had epilepsy since the age of 14 years. It became quite apparent that many of her grand mal and petit mal seizures were definitely related to nervous upsets. The patient had had no serious grand mal seizures recently until her husband amputated part of his right index finger. This produced one gran mal seizure after the other. The patient was placed on Mesantoin and Hydantal antiepileptic therapy which curbed her grand mal seizures but not her petit mal seizures. She then was given Plexonal, one tablet three times daily. The patient has been seizure free and free from any nervous upsets for 30 days.

Discussion

Plexonal has proved to be an ideal daytime sedative. The combination of three barbiturates with Dihydroergotamine and Scopolamine is rational and has been found to be superior to many other sedatives. Fifty-one of the fifty-three patients obtained the desired sedation and a feeling of well-being. The average duration of treatment was two months or more. In my experience it has proved to be an excellent combination for ambulatory patients and it was useful in the preparation of the patient for psychotherapy.

Summary

1. Plexonal produces a high percentage of excellent results as a daytime sedative.
2. It produces fewer side effects and is longer acting than other sedatives previously employed.
3. It is a useful agent as an adjunct to psychotherapy.

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CLINICAL NOTES FROM GRAND ROUNDS

These notes are abstracts of opinions expressed by staff members during case presentation at the Friday Grand Rounds of the Pratt Diagnostic Clinic—New England Center Hospital.

Massive ascites may be reduced gradually through the use of a polyethylene tube inserted into the abdominal cavity by means of a special needle or trocar, the needle being removed after the tube is in place. The tube, with several openings made in its intra-abdominal portion, is held in place by a single suture. The other end of the tube is inserted into a bottle, a pinchcock controlling the rate of flow. The flow is adjusted so that it takes from 36 to 48 hours to reduce the pressure of the fluid in the abdomen. During this time the patient is free to move about in his bed. Advantages of the method are that it may be used without causing much psychic or physical trauma in acutely ill patients, and pressure adjustments are made gradually rather than acutely. Because of the slight danger of introducing infection by this method, prophylactic antibiotic therapy should be used during the procedure.

Cardiac Arrest

By Jack T. Rush, M. D., F. A. C. S., El Paso

Sudden death in the operating room or clinic following anaesthesia is not new, but it was not until recent years that the physiological basis for cardiac arrest was understood.

By definition cardiac arrest is that condition in which there is an inadequate amount of oxygenated circulating blood to sustain life. This is a very broad definition and a more accurate definition one should include the statement "for no demonstrable reason", many deaths in the operating room occur due to pulmonary embolus, cerebrovascular accident, asphyxia, overdose of anaethesia, coronary thrombosis hemorrhage, etc.

The incidence of cardiac arrest varies with different clinics being higher where there is a large amount of cardiovascular surgery performed. At the Johns Hopkins Hospital 5.5 per cent of cardiac surgery cases develop arrest.[1] While Beecher and Todd[2] report death in each 2680 anaesthetics. Statistics taken from 30 large medical centers by Stephenson et al. reveal one case of cardiac arrest in 2384 operations. The sex incidence is 61 per cent male and 39 per cent female. 86 per cent occurred in the operating room; 14 per cent occurred outside the operating rooms.[3]

Two Types

There are two types of cardiac arrest each having a well explained physiological etiology. In ventricular fibrillation, which accounts for only 10 percent of cardiac arrests seen surgically, there is an excessive cardiac reaction to epinephrine. This excessive action of epinephrine which may be due to excessive production of epinephrine due to fear, excitement, or drug reactions.

The myocardium may be chronically damaged and more susceptible to the action of epinephrine. Cold will also produce ventricular fibrillation in experimental animals. In cardiac asystole, which accounts for 90 per cent of cardiac failures seen surgically, the etiological agent is excessive action of acetylcholene which is produced at the myoneural junctions in the heart secondary to vagal stimulation.

Anoxia plays a most important role in cardiac arrest because it inhibits cholinesterase which normally destroys excess acetylcholene and also sensitizes the myocardium to the effect of acetylcholene. Cardiac arrest occurs when the coronary blood pressure is maintained below 70 mm. Hg. for one-half hour. Stimulation of the vagal reflex by handling the hilum of the lung, bronchus, esophogus, pharynx, or structures in the neck may initiate cardiac arrest.

Warning Signs

Warning signs such as bradycardia, tachycardia, or extra systoles should alert the anaesthesist that something is wrong. Prophalaxis is most important. Elderly patients and those with known cardiac disease should have an electrocardiogram and cardiac clearance before elective surgery.

Maintenance doses of digitalis or quinidine should be continued but toxic doses must be avoided. The hilum of the lung should be infiltrated with 1 per cent procaine during chest surgery. Protect the vagae nerves and carotid bodies from stimulation.

The blood pressure should be maintained at near normal levels to prevent shock and anoxia. Whole blood, plasma, dextran, Vasoxil, Levophed, or neosynephrine may be used to maintain blood pressure.[4]

Atropine has been highly recommended as a prophylactic agent, but in my experience has not proven to be of any benefit in preventing vago-vagal syndrome.

Perhaps newer anticholenergenic drugs such as Banthine, Monodral, Antrenyl, etc., would be more efficacious, but results of such experiments have not been reported.

Diagnosis

The diagnosis of cardiac arrest is the joint responsibility of the anaesthesist and the surgeon. The anaesthesist should know the pulse rate, respiratory rate, and blood pressure at all times. The surgeon should note the color of the blood, the warmth and color of the tissues, and the presence or absence of arterial pulsations. Working as a team the surgeon and anaesthesist should make the diagnosis immediately by the following signs:

1. Imperceptible pulse and blood pressure.
2. Labored respiration which soon stops.
3. Absence of bleeding.
4. Cyanosis followed by pallor.
5. Widely dilated pupils.
6. Inaudible heart sounds.
7. Stoppage of direct writing EKG.

In no other condition is the cooperation between the surgeon and anaesthesist so important. After warning the surgeon of the cardiac arrest the anaesthesist should introduce an endotracheal tube and administer 100 per cent oxygen at the rate of 20 - 24 respirations per minute at a pressure of 12 mm. hg. There is no time for consultations or to call another surgeon.[5]

Delay is fatal. The doctors present must carry out cardiac resuscitation immediately. Do not attempt to stimulate the heart by injections of Adrenalin through the chest wall. The surgeon must open the left Chest through the 5th or 6th interspace.[6] In men this is the intercostal space just below the nipple.

No Antiseptic

No antiseptic is needed on the skin—there will be no bleeding. The internal mammary vessels may be

avoided by staying one inch lateral to the lateral border of the sternum.

If these vessels are cut they may be ligated later. The costal cartilages are cut to allow more room for the wrist. The pericardium is opened and the fingers of the right hand are placed behind the ventricles with the thumb in front. The heart is then intermittently compressed at the rate of about 80 per minute.

The table should be put in marked Trundelenburg position to increase cerebral circulation. Intravenous fluids should be administered rapidly so that the right side of the heart will fill between compressions.

The aorta should be compressed by an assistant.

If the heart fails to respond after a brief period of massage ½ cc 1/1000 epinephrine in 5 cc. saline should be injected into the left ventricle.

Weak Heart Beat

If the heart beat is weak 10 cc 10 per cent calcium chloride injected into the left ventricle will greatly increase the force of the contractions and may stimulate the heart that fails to respond to massage.[7] Calcium gluconate is not suitable as it is poorly ionized and does no good.

If the heart is in fibrillation it should be defibrillated by means of an electric defibrillator which shocks the heart into standstill and then it must be massaged to get it started again.

There are several commercial defibrillators on the market and one may be constructed cheaply in any shop.[8] One hundred ten volt current is run through a resistance coil of 19 ohms. The electrodes should be at least 1½ inches in diameter so as not to burn the surface of the heart. One electrode is placed behind the apex and the other at the A. V. junction.

Current Applied

Current is applied by means of a hand or foot switch for .1 to .5 seconds. The force of the shock will make the whole body hump and may have to be applied from one to five times in order to stop the fibrillation. After the heart is defibrillated it should be bathed in 1 per cent Procaine and 10 cc. 1 per cent Procaine injected into the left ventricle to reduce cardiac irritability.[9]

The heart is then massaged in the usual manner until normal rhythm has been established. It is necessary to have two or more doctors to massage the heart as it is very fatiguing and the massage may have to be carried on for 30 minutes.[10]

Dr. Zoll of Boston has developed an artificial pace maker which regulates the heart in patients with complete heart block and can start the heart in experimental animals, and has been successful in two human patients.[11]

Heart Observed

The heart should be observed for 20 minutes after it has resumed normal rhythm. The pericardium should be closed loosely as considerable pericarditis develops after massage. The chest is drained by an intercostal tube attached to an under water seal bottle and the chest closed in layers.

Post operative care is the same as for any thoracotomy operation. There is usually a tachycardia for several days and not infrequently some irregularity.

Prognosis depends on the condition of the patient for whom the original operation was performed as well as the duration of time that the heart was stopped. Three minutes is the upper limit that the heart can be stopped without resulting in brain damage. After the heart has been stopped for eight minutes it is usless to massage the heart.[12]

Report On Cases

Barber and Madden[13] in reviewing the literature from 1924 to 1946 found 44 cases reported with complete recoveries in 23 cases, or 52 per cent. Bost[14] in a review of literature from 1946 to 1950 found 34 reported cases with 21 complete recoveries or 60 per cent. From 1924 to 1950 there were a total of 178 reported cases with 69 complete recoveries or 38 per cent. Stephenson et al[3] reported a review of 1200 cases reported up to the present time with 28 per cent complete recovery.

In my own experience I have seen approximately 50 cases with six complete recoveries. In many cases the heart will respond with normal rhythm and the patient appears to be doing well, but the pupils remain dilated and the patient remains in a decebrate state.

There is one patient still living in such a condition for over two years. Most patients who have brain damage will die of pneumonia in a few weeks.

Electroencephalographic studies of these patients reveal a normal sleep wave with blockage of afferent impulses in the brain stem. At autopsy the brain appears normal but minute areas of focal necrosis are found in the brain stem.

Conclusion

In conclusion I would like to state that every physician and surgeon should be trained to perform cardiac massage as it may occur any place or anytime that an anaesthetic is used. An emergency pack should be kept sterile in all clinics and operating rooms containing the following supplies:

2 scalpels
2 hemostats
2 pair scissors
2 5cc syringes
2 No. 20 spinal needles
2 No. 18 spinal needles
2 ampules of 1/1000 epinephrine
2 5cc ampules of 10 per cent procaine solution
2 10cc ampules of 10 per cent calcium chloride

The following procedural guide should be posted

in all operating rooms and clinics. Every doctor should be familiar with the steps of cardiac resuscitation.

Procedure to Follow In Cases of Cardiac Arrest

1. Make diagnosis immediately by absence of pulse.
2. Establish an airway and give artificial respiration with respirator, anesthetic machine, or mouth to mouth breathing.
3. Open the left chest through the fifth interspace. Make incision just below the nipple from the sternal border to posterior axillary line. Open the pericardium, insert hand with fingers behind the heart and thumb in front. Intermittently compress the heart at a rate of 60-100 beats per minute.
4. Call For Surgical Assistance. Get anesthetist with gas machine to give 100 per cent oxygen through endotracheal tube.
5. Insert a large needle in a vein (15 gauge) and administer fluids rapidly to fill the patient's heart.
6. Lower the head of the table to increase cerebral circulation.
7. If heart does not begin to beat after 3 minutes, inject ½ cc. 1/1000 Adrenalin in 5 cc. procaine into left ventricle. 2 - 4 cc. 10 per cent Calcium Chloride will increase heart tone.
8. If fibrillation develops, call for defibrillator in Main O. R.
9. Observe the heart for 20 minutes after heart has resumed beat, to make sure it does not stop.
10. These instructions are to be carried out *by the physician present* at the time of cardiac arrest.

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CLINICAL NOTES FROM GRAND ROUNDS

These notes are abstracts of opinions expressed by staff members during case presentations at the Friday Grand Rounds of the Pratt Diagnostic Clinic—New England Center Hospital.

In bronchial asthma associated with secondary (anoxemic) polycythemia, cor pulmonale, and right ventricular failure, energetic therapeutic measures are necessary. Venesection, with reduction of hematocrit values to normal or slightly above, is often helpful—and of course, full digitalization, mercurial diuretics, and a low sodium diet are indicated. ACTH or cortisone therapy should *not* be withheld if either is necessary to control the asthma, because when bronchospasm and its attendant increased respiratory efforts are reduced, the work of the heart is lessened. A new type of positive pressure breathing apparatus called a "pulmonary ventilator" has been used to improve gas exchange in the lungs, relieving anoxia and reducing carbon dioxide retention. With this device, nebulized epinephrine, isuprel, and antibiotics may also be introduced into the lungs under pressure. It has also been noted that Diamox, a carbonic anhydrase inhibitor, is particularly helpful in this disorder because it promotes bicarbonate excretion in the urine, bringing about a reduction in the serum bicarbonate and an increase in the serum chlorides, thus potentiating the effectiveness of mercurial diuretics. (It is well known that ammonium chloride may be harmful when there is respiratory acidosis.)

✣

When acute surgical emergencies develop during convalescence from acute myocardial infarction, necessary surgery should not be unduly delayed; with modern anesthesia methods even these patients tolerate surgery surprisingly well, and delay may serve to still further weaken the already damaged heart. In such cases, of course, the minimum amount of surgery should be undertaken, any necessary secondary operation being performed later at a time of election.

✣

The most likely causes of a sudden change in personality in a person over the age of sixty are: subdural hematoma, malignant brain tumors, or metastatic malignancy. The differential diagnosis is of utmost importance because in subdural hematoma the prognosis is good if the condition is recognized early in its course and promptly treated surgically.

✣

Hypertrophy of the gums is one of the early signs of acute monocytic leukemia. A new nitrogen mustard compound known as "GT41" has been shown to have a depressive effect on monoblasts, and may have a temporarily beneficial effect in monocytic leukemia.

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Vitamin K and Its Indications

By Carlos Albores, M. D., Torreon, Coahuila, Mexico

This Vitamin is very widely used. It is prescribed by pharmacists and midwives for any hemorrhagic suffering, but we doctors also use it without indication or usefulness in hemorrhages brought about by abortions, metrorrhagia of endocrine origin, for tumors of the uterus, and in childbirth. There are surgeons who use this Vitamin as preoperative routine and the N T E use a wonder blend, Vitamin K and Coagulen before tonsillectomies. It is used for haematemesis caused by ulcers, for haemoptysis caused by tuberculosis or cancer, haematurias and even for wounds which bleed profusely.

Vitamin K

Vitamin K is an essential dietetic substance for blood coagulation. In 1929 Dam observed how chickens fed with little grease would acquire a disease characterized as spontaneous hemorrhages which he believed were caused by the diminishing prothrombin contained in the blood. This disease was promptly cured with alfalfa and other green plants. Dam himself named the substance found in these foods thusly: Vitamin K (Koagulation).

A little later, Quick found the same thing in people sick with jaundice. Hawkins and Whipple found the same thing in blood of dogs with biliary fistula.

In 1938 Butt and Warner pointed out the effectiveness of Vitamin K and biliary salts found in hemorrhagic diathesis of jaundice patients. Almquist and Stokstd show that Vitamin K is a lipid soluble substance and is found in alfalfa, in vegetable oils, in decayed proteins, in fish, in casein, etc.

In 1939 Doisy separated Vitamin K from alfalfa, chemically 2-metil-3-fitil-4-naftaquinona, hence the knowledge of the chemical activity of the quinone.

Principally, the menadione is used, a crystalline powder, brilliant, odorless, insoluble in water, soluble in alcohol and in vegetable oils. There are also derivatives such as sodium bisulphite of menadione which is soluble in water and which is used frequently.

Action of Vitamin K

Vitamin K is indispensable to maintain the prothrombin found in sanguineous plasma at a useful level; that is, it is a very important element in the mechanism of sanguineous coagulation.

We all know the important part that prothrombin plays in the intricate mechanism of sanguineous coagulation; and precisely, it is Vitamin K which is intimately related with the complex synthesis of this protein, prothrombin, which surely takes place in the liver, and although its intimate mechanism is unknown it is supposed that Vitamin K works as a prosthelic group for an enzyme in the synthesis that hepatic cells make of prothrombin. Surely Vitamin K combines itself with an apoenzyme forming an active enzyme which makes prothrombin.

Milligram Daily

If there should not be sufficient Vitamin K, and we only need one milligram daily, the prothrombin level lessens, and as a result there is a deficiency in coagulation and a tendency to hemorrhage. It is insufficiency of Vitamin K that repels in the synthesis of prothrombin and in turn in sanguineous coagulation.

Therefore, when there is a deficiency and only then is Vitamin K indicated. In no other circumstance is it anti-hemorrhagic, nor coagulant, nor hemostatic; and fortunately its deficiency is not frequent, as the organism obtains it easily from food.

Are all hypoprothrombinemias caused by a deficiency of Vitamin K?

What disorders contribute to hypoprothrombinemia?

Disorders Listed

a. Toxic or infectious hepatitis with hepatic insufficiency. Vitamin K is useless in this case because of the lessening of prothrombin caused by damaged hepatic cells therefore, prothrombin is not synthesized.

b. The lessening of prothrombin caused by a deficiency in the absorption of Vitamin K in the intestine because of biliary obstruction—bile is indispensable for its absorption—or by ingestion of sulfas that modify the bacterial population, which is also necessary. Vitamin K is suggested in this case.

c. By deficient nourishment, especially in the newborn because his intestinal flora has not yet developed.

d. By anti-coagulant or antagonistic drugs which probably hinder the synthesis of prothrombin, neutralizing the action of Vitamin K.

The above enumeration points out that not all hypoprothrombinemias improve with Vitamin K and that one of the tests for examining the hepatic function (Koller), is based on the administration of Vitamin K, which normalizes sanguineous prothrombin 24 hours after its injection and is negative in case of damaged hepatic cells.

Review

Let us review the reasons for hemorrhage, and may we stress that there are few caused by an insufficiency of prothrombin and that nearly all the sanguineous losses are due to other reasons, the motive for which Vitamin K is useless.

Causes for Hemorrhage

A. Injury of the large blood vessels brought about by traumatism. The wearing away of vessels through pathologic processes.

B. Deficiency in vascular function.
  1. Multiple Hereditary Telangiectasis.
  2. Purpura not thrombocitopenias.
  3. Lack of Vitamin C (Scurvy) and P.

C. Brittleness of skin and vessels. (Ehler's Syndrome — Danels).

D. Failure of Factors Intervening in Coagulation.
  1. Quantitative Deficiency of platelets.
  2. Qualitative Deficiency of platelets. (Hemophilia).
  3. Diminished Prothrombin.
    a. Absence of Vitamin K.
    Jaundice caused by obstruction, biliary fistula, deficient intestinal absorption, scarce diet, disappearance of or diminished intestinal bacterial population, by sulfas or antibiotics, hemorrhagic disease of the newborn.
    b. Hepatic Injuries.
    c. Toxics, dicumarol, salicylates.
  4. Diminished fibrinogen.
    a. Constitutional Congenital Fibrinogenia.
    b. Serious hepatic injury.
  5. Excessive quantities of anti-coagulants in the blood.
    a. Heparin.
    b. Hyrudin.
    c. Dicumarol, Troxoman, etc.

Sometimes Useful

After having mentioned the causes for hemorrhage and bearing in mind the physiological function of Vitamin K, we have to come to the conclusion that it is useful only when prothrombin has decreased because of an insufficiency of said vitamin, provided the hepatic cell functions correctly.

When we use Vitamin K for other hemorrhagic conditions, it is uselessly and improperly prescribed, and when used for conditions not hemorrhagic, as is advised by the same laboratories producing said vitamin, it is done empirically; as there is not sufficient physiological basis to render it useful for coeliac disease, for chilblain, for arterial hypertension, and for whooping cough.

Therapeutic Uses of Vitamin K

1. It should be used for biliary obstruction or for fistula, and prophylactically for patients with jaundice who are to undergo surgery, even when prothrombin blood activity is normal. From five to ten milligrams as a daily requirement is sufficient.

2. When there is defective absorption of Vitamin K and there exists a hypoprothrombinemia as it is prone to be with sprue, regional enteritis, dysentery, and after wide resections of the intestine, Vitamin K is indicated.

3. There exists in the newborn a physiological hypoprothrombinemia which at times originates hemorrhagic diseases in the child. Although not everyone sustains a deficiency of Vitamin K as etiology, taking into account it is an innocuos procedure and if it can prevent a good many deaths among the newborn, it can readily be used as routine with them. Antagonism between anti-coagulant drugs and Vitamin K is a solid basis so that it may be used to counteract or retain the action of anti-coagulants which are actually being used frequently.

4. The hypoprothrombinemia caused by salicylate ingestion or sulfas and streptomycin responds very well to Vitamin K.

5. Vitamin K should be given to counteract the actions of anti-coagulants when necessary.

CLINICAL NOTES FROM GRAND ROUNDS

These notes are abstracts of opinions expressed by staff members during case presentation at the Friday Grand Rounds of the Pratt Diagnostic Clinic—New England Center Hospital.

Diabetic retinopathy is characterized by the appearance of punctate microaneurysms of capillary vessels that develop in clumps, often with surrounding exudates and hemorrhages. The small aneurysms look like petechiae but may persist for weeks or months; they eventually become hyalinized, however, and remain as white dots. There is high correlation between the appearance of diabetic retinopathy and the development of Kimmelstiel-Wilson lesions in the kidney. These manifestations of diffuse vascular disease, as well as arteriosclerosis and hypertension, may occur despite good diabetic management, but are most common in poorly controlled diabetics.

✣

Panhypopituitarism and anorexia nervosa bear only a superficial resemblance to each other. Anorexia nervosa is poorly named, in that there may not be anorexia; indeed, the appetite may be excessive but well-controlled even in the weight-losing phase. Sprees of excessive eating may be observed. It is a disorder of women, by definition, and occurs in early adult life. Amenorrhea and severe loss of weight are essential features. A bland attitude and a deceptive manner of not eating while food disappears are common. The disease is to be regarded as a serious mental disorder.

✣

Panhypopituitarism affects both sexes, is only occasionally associated with severe loss of weight. and may follow an abnormal and hemorrhagic delivery, be caused by pituitary tumor or ablation, etc. Amenorrhea, atrophy of the testes, thyroid insufficiency, loss of hair growth, and hypoglycemic episodes may be observed. Cortisone is helpful in this disease but not in anorexia nervosa.

✣

Strontium chloride has been advocated for the treatment of senile and postmenopausal osteoporosis and is alleged to give relief from pain for so long as its administration is continued.

Clinical Note on Cautery of Cervical Lesions

By Joseph B. Raddin, M. D., Phoenix

Etiology

Cervical erosions, Nabothian cysts, edema of the cervix, and pelvic parametritis are commonly the result of endocervicitis. The usual cervical erosion is due to irritation by the discharge from the cervical canal gland infection flowing over the cervix.

Therapy

1. Cleanse the cervix and cervical canal of discharge. Do not be too vigorous.

2. Negetan (Lilly) is applied by cotton swab to the cervical canal and to the erosion, taking precautions to protect the vaginal mucous membrane with a piece of gauze from contact with the Negetan.

3. Insert a medicated vaginal tampon which is retained for 24 hours.

This treatment is repeated three times weekly during the interval between menstruation.

Acetic acid douches, three or four tablespoonfuls of white or distilled vinegar to one quart of warm water, is used daily between tampon treatments. A douche each morning during menstruation until the cervix is healed is routinely prescribed to prevent a flareup of the cervical canal gland infection.

Cautery Is Not Indicated For Most Cervical Lesions

Cautery of most cervical erosions is not necessary when the conservative therapy suggested is used.

Cautery of the cervical canal glands for infection is not necessary nor desirable because of the frequency of cervical canal stenosis subsequent to effective cautery.

Radical conization by knife or cautery is not desirable because excessive scar tissue and stenosis is a common sequel.

Cautery Is Indicated For Few Cervical Lesions

Cautery destruction of Nabothian cysts is always indicated. It should be thorough but not excessive.

Cautery of the base of cervical polyps is desirable.

A large ugly looking cervical erosion may be cauterized after biopsy has been reported negative for carcinoma.

Summary

Cautery of cervical lesions is commonly indicated only for Nabothian cysts, cervical polyps and large cervical erosions. Frequency of cervical canal stenosis contraindicates cautery and conization for endocervicitis.

Cervical erosions regularly heal promptly without cautery when the cervical canal gland infection is treated in the manner suggested. Large chronic cervical erosions often heal rapidly without cauterization.

Carcinoma of the cervix is considered to be a common sequel of chronic cervical erosion. Treatment of endocervicitis thus cures and prevents cervical erosions and is also prophylactic therapy for carcinoma of the cervix.

CLINICAL NOTES FROM GRAND ROUNDS

These notes are abstracts of opinions expressed by staff members during case presentation at the Friday Grand Rounds of the Pratt Diagnostic Clinic—New England Center Hospital.

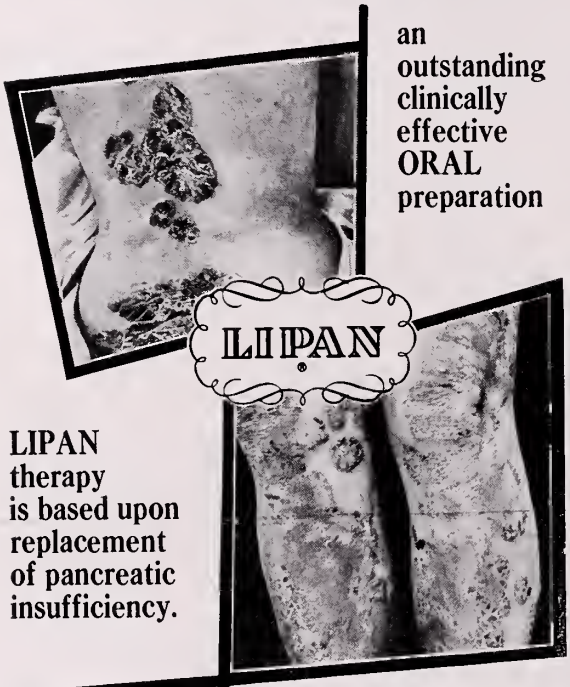
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✣

In pulmonary sarcoidosis ventilatory studies are usually normal except for a slight restrictive defect; there is, however, a diffusion defect due to disease in the region of the alveolo-capillary membrane. Other diseases may be pathologically indistinguishable from pulmonary sarcoidosis, notably: pneumonitis resulting from inhalation of beryllium dust, eosinophilic granuloma, and certain cases of tuberculosis. In sarcoidosis there is reduction of skin sensitivity and the tuberculin test is almost always negative; there may be hyperglobulinemia; in about one-quarter of the cases there is hypercalcemia often complicated by renal calculi. Because of the possibility of tuberculosis in these cases, material removed at biopsy should be inoculated into guinea pigs. The Nickerson-Kveim test (performed by intracutaneous injection of sterilized material obtained from lymph nodes or spleens of patients with sarcoidosis and later biopsy of the injected area) probably is non-specific and therefore is not always diagnostic even when positive. Treatment is often not necessary. Adrenal steroids may be useful, but because there is danger of tuberculosis, they should be covered with isoniazid and/or streptomycin and para-aminosalicylic acid (PAS).

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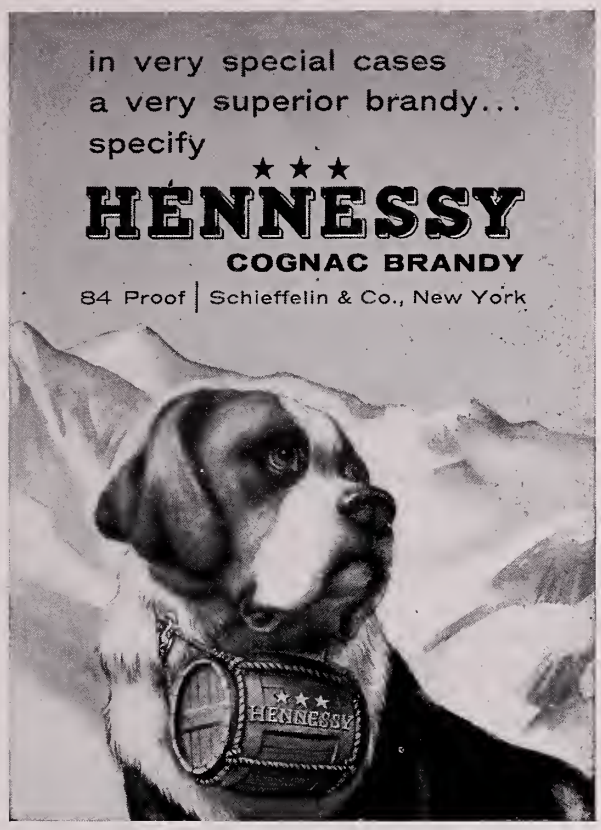
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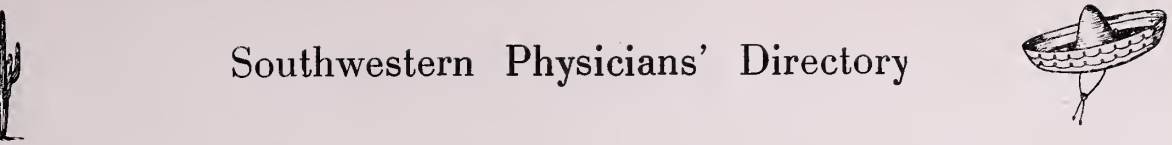
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1. DeWeese, D. D.: Symposium: Medical Management of Dizziness. The Importance of Accurate Diagnosis, Tr. Am. Acad. Ophth. *58*:694 (Sept.-Oct.) 1954.
2. Jackson, C., and Jackson, C. L. (editors): Diseases of the Nose, Throat, and Ear, Philadelphia, W. B. Saunders Company, 1945, pp. 368; 414.
3. Queries and Minor Notes: Ménière's Syndrome, J.A.M.A., *141*:500 (Oct. 15) 1949.

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1. Braceland, F.J.: Texas State J. Med. 51:287 (June) 1955.
2. Lemere, F.: Northwest Med. 54:1098 (Oct.) 1955.



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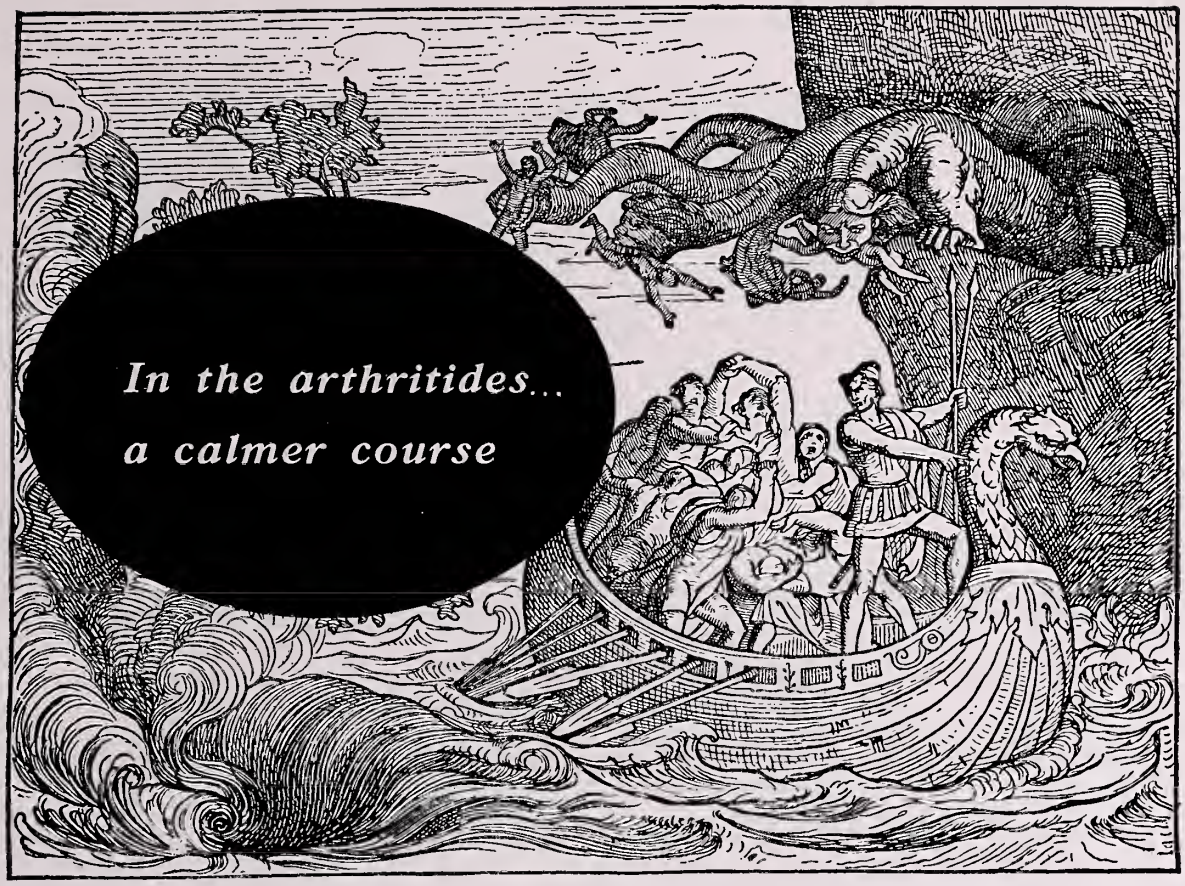
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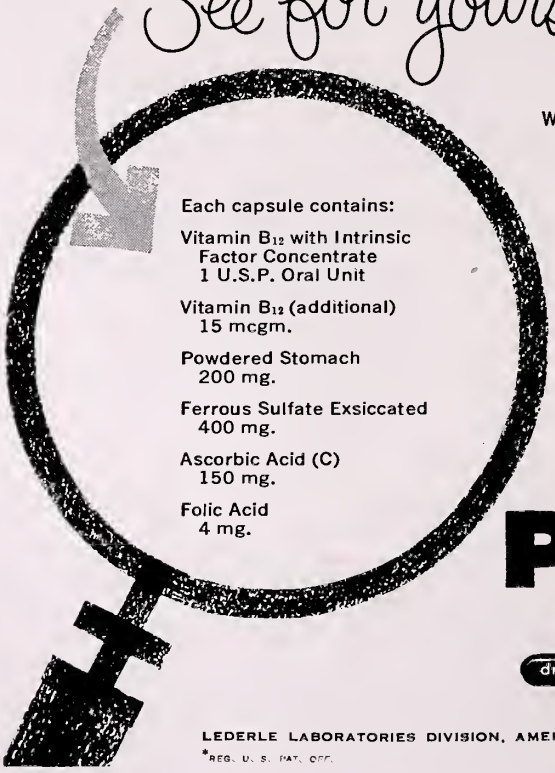
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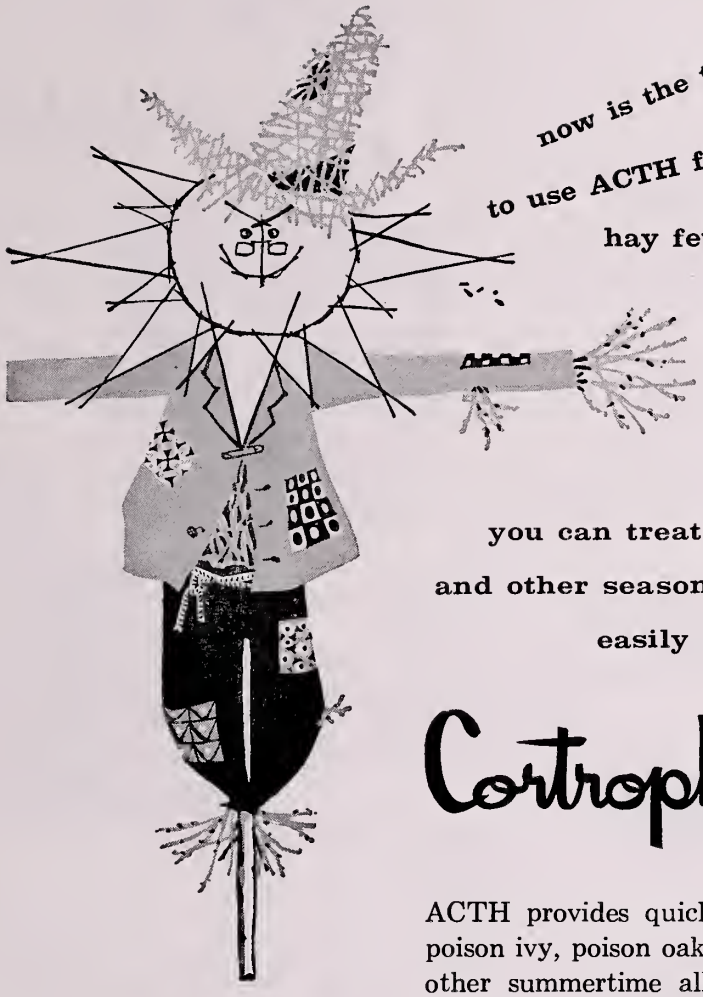
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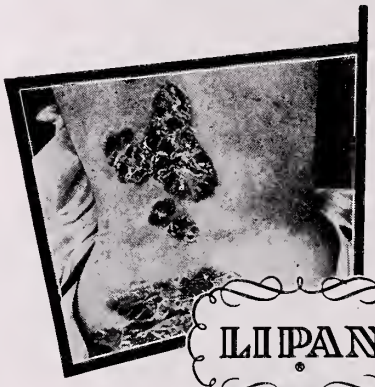
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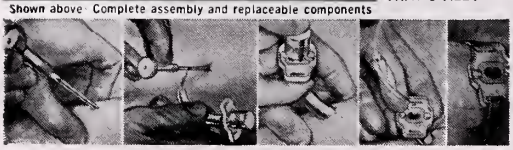
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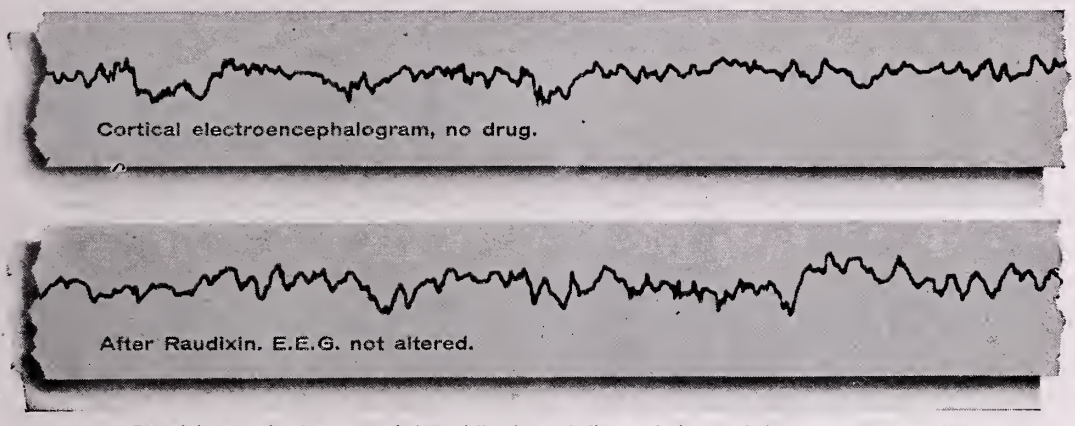
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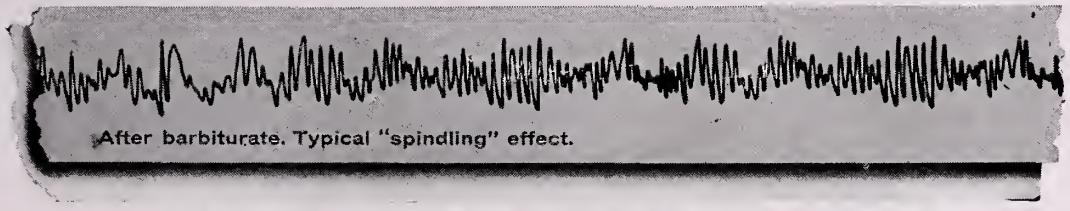
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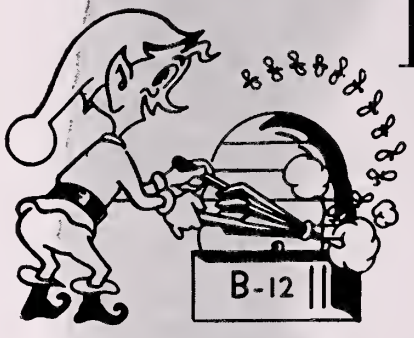
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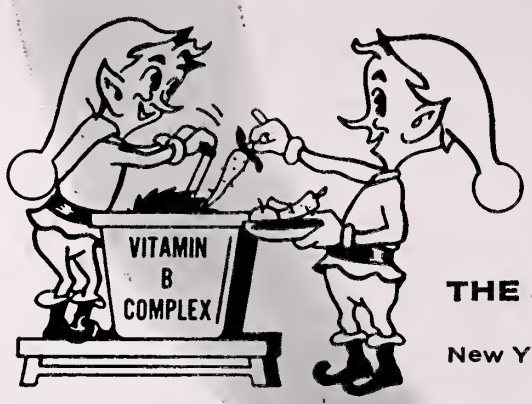


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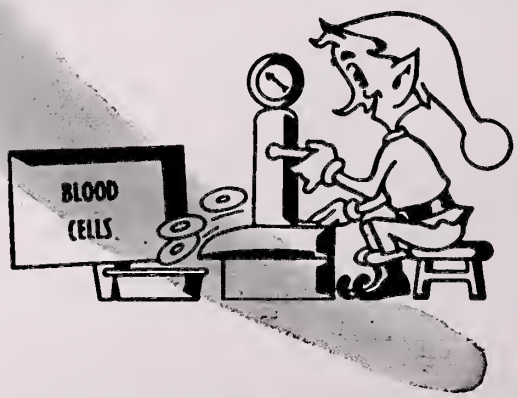
Iron peptonized (Equiv. in elemental iron to 71 mg.)	420 mg.
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Thiamine hydrochloride	10 mg.
Riboflavin	10 mg.
Vitamin B_{12} (crystalline)	20 mcg.
Niacinamide	50 mg.
Pyridoxine hydrochloride	1 mg.
Pantothenic acid	5 mg.
Liver fraction 1	2 Gm.
Rice bran extract	1 Gm.
Inositol	30 mg.
Choline	60 mg.

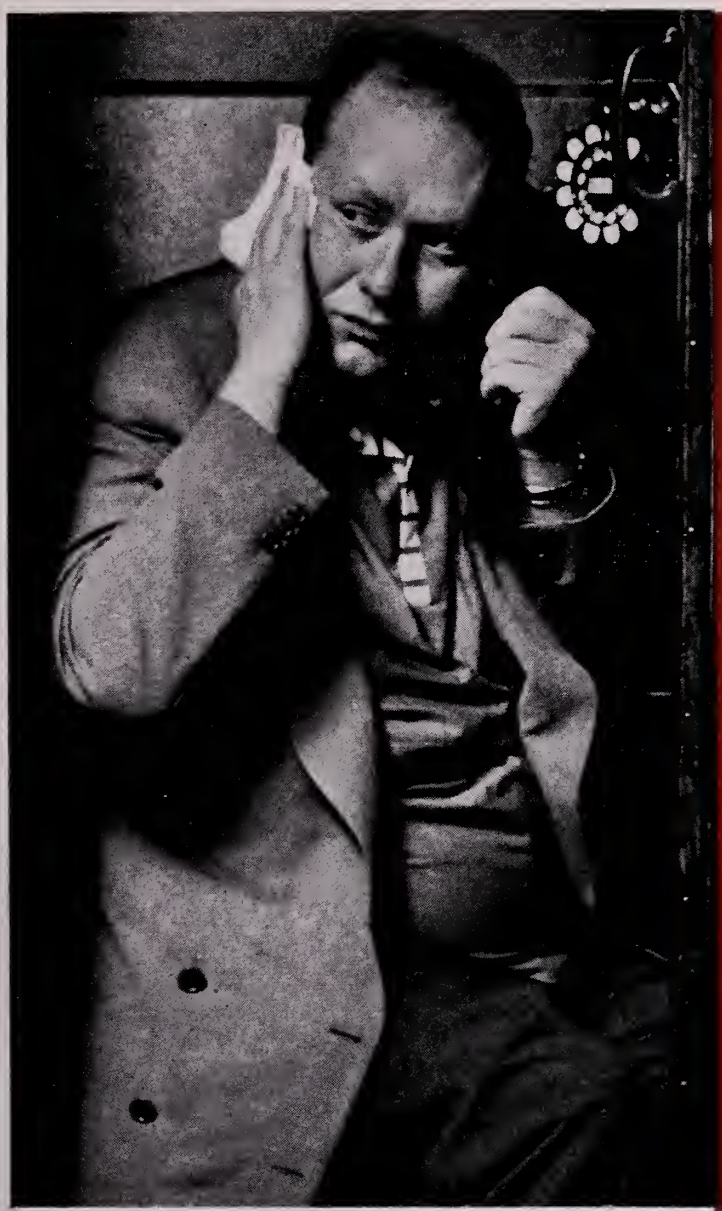


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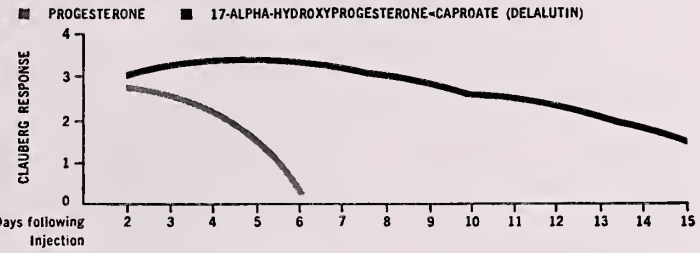
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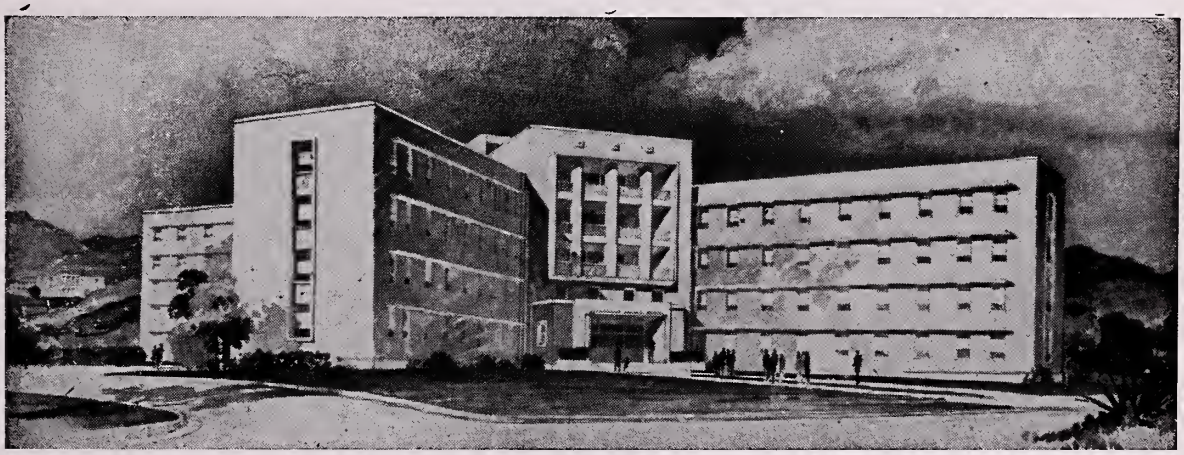
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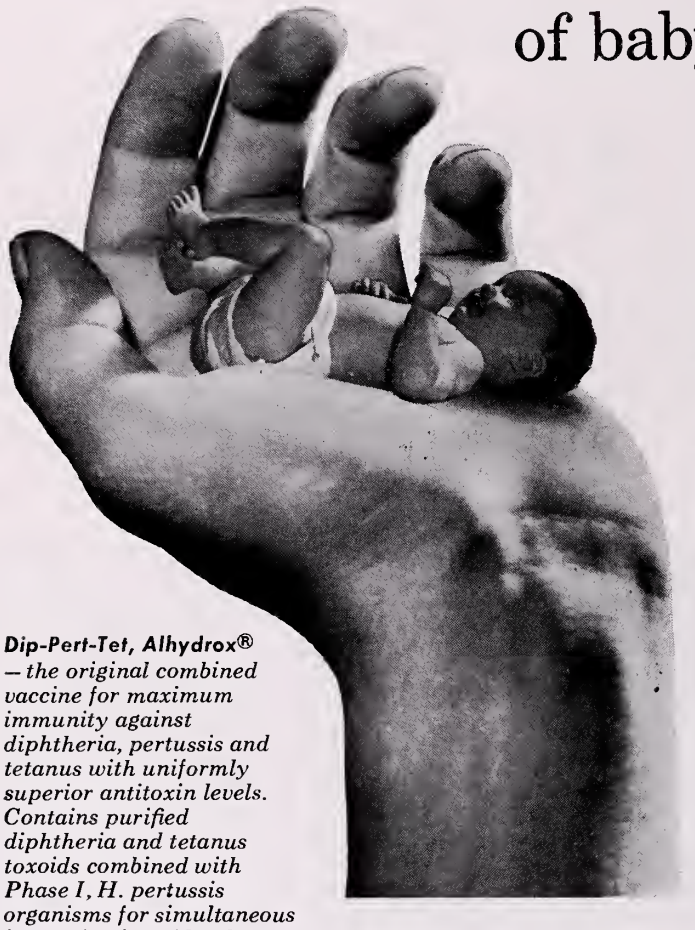
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CURRENT THERAPY

Tranquilizing Drugs

By Jack A. Bernard, M. D., El Paso

The tranquilizing drugs, designated Ataraxics, from the Greek word "ataraxy" meaning freedom from confusion or peace of mind, are a new class of agents having the characteristics of sedatives but not the same end effects nor do they behave like true sedatives.

They are said to act by blocking subcortical areas and they bring about a reduction in tension or excitement to produce a calm or tranquil state. Large doses result in sleep. These substances include: Meprobamate (Miltown and Equanil), the phenothiazines chlorpromazine (Thorazine) and promazine (Sparine), the azacycolenol Frenquel and the crystalline derivatives of R. Serpentina.

Meprobamate which is Miltown and Equanil, is a derivative of mephenesin (Tolserol) and has three pharmacological properties: A muscle relaxant action, an anticonvulsant action, and a taming effect (observed in experimental monkeys). Vital functions such as pulse rate, blood pressure, temperature, and intestinal mobility are not affected.

Dosage

Usual dosage is one 400 mg. tablet three or four times a day although higher dosages may be given. Toxicity is extremely low as some patients have taken as high as 50 to 100 tablets and have recovered. Side reactions include allergic angioneurotic edema and fever. Drowsiness may also occur depending upon the dosage.

Meprobamate has been found to be most successful in the anxiety and tension states and seems more effective than the barbiturates in many instances. It is very helpful also in tension headaches, premenstrual stress and insomnia.

It has been reported to be effective in the control of petit mal epilepsy, and is said to be less effective than Tridione, but as effective as Paradione, and is superior to other anti-petit mal drugs. It was not found to be of value in grand mal epilepsy. Its absence of toxic effects may make it a very important drug in the control of petit mal epilepsy.

Phenothiazines

The phenothiazines, chlorpromazine and promazine (Thorazine and Sparine) are preferred in the management of the acutely disturbed patient. The toxic reactions of chlorpromazine have not yet been reported from promazine. No severe circulatory collapse has been reported from promazine and the other side reactions such as tachycardia and jaundice also are not yet reported.

Chlorpromazine may produce an obstructive type of jaundice which usually clears upon cessation of the drug, but in some patients the jaundice may persist for months. Agranulocytosis has been reported in a few cases from the use of chlorpromazine.

The phenothiazine drugs have their greatest usefulness in the acute alcoholic, acute psychotic and the drug addict. Promazine has also been used in obstetrics to shorten labor and enhance the sedation of other drugs; no ill effects were observed on the new born infant.

Delusions and Hallucinations

Merrell has introduced Frenquel, which is said to be indicated for treatment of acute schizophrenic reactions and certain toxic psychoses, particularly where delusions and hallucinations have been the prominent symptoms; it occasionally was of value in some cases of senile hallucinatory states.

It is said to be without side effects and the patients are calm without being sedated, producing a cooperative state. The dosage is 20 mg. three times daily by mouth. Further reports and experiences are awaited.

Reserpine is also being used successfully for anxiety tension states as well as for hypertension. Complications include nasal stuffiness, mental depression; higher doses may produce a state of Parkinsonism Reports of mental depressions in patients on this drug are becoming more numerous and this is a real and serious hazard that must be kept in mind.

True Clinical Value

Finally, it has been said that new drugs usually pass through three states before their clinical usefulness is established. During the first stage they are received with enthusiastic and often uncritical acceptance for a variety of conditions. During the second phase, a reversal of judgement frequently occurs and the value of the drug is doubted by many. Eventually, during the last phase, the true clinical value of the product is established. So be it with the ataraxics.

Edited by Andrew M. Babey, M. D., Las Cruces, N. M.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

1. "It has been suggested that the development of pronounced intraventricular block is a clue to the imminence of these complications. Occasionally one will be justified in proceeding with this therapy in spite of such a development. It has been our practice, where the gravity of the situation warrants, to proceed cautiously with quinidine or Pronestyl despite the development of pronounced intraventricular block since the drug may yet abolish the arrhythmia." Harold D. Levine, Samuel A. Levine, *"Management of Cardiac Emergencies";* The Medical Clinics of North America; July 1953, p. 963.

2. "The other common cause of sudden, severe abdominal pain is perforation of a viscus, which as a general rule, is preceded by discomfort of some sort, suggesting the development of a localized process. Even in the usual perforated duodenal ulcer one can almost always find, on careful questioning, that there were antecedent symptoms suggesting activity of the ulcer." Dr. John B. McKittrick, *"Case Records of Mass. Gen. Hosp.";* New England Journal of Medicine; May 26, 1955, p. 915.

3. "It has been my brief experience that appendicitis is seldom typical and usually presents itself as a variation on the classic theme. "Dr. McKittrick, *loc. cit.,* p. 915.

Factors Listed

4. "The virulence of the organisms, the presence or absence of vascular occlusion in the appendix and the location of the organ itself — behind the cecum, in the pelvis, amongst loops of small bowel, free against the anterior parietal peritoneum and so forth — are some of the factors that influence the development of the process and the findings in any given case." Dr. McKittrick, *loc. cit.,* p. 915.

5. "Usually, when appendicitis starts in such a dramatic and severe fashion, it means that the appendix has been invaded by a very virulent organism that rapidly dissolves the organ and that gangrene and perforation develop very quickly. Under these circumstances it is not common to find a localized abscess, but rather a spreading peritonitis." Dr. McKittrick, *loc. cit.,* p. 915.

6. "It is surprising how much blood may be in the peritoneum without producing pain, tenderness or discomfort." Dr. McKittrick, *loc. cit.,* p. 915.

7. "This patient brought out a point that the older surgeons used to make about appendicitis. In the inflammatory type of disease, without primary obstruction such as might be caused by a fecalith, early vomiting is rare, and nausea is not prominent. The process is more leisurely." Dr. Gordon A. Donaldson, *loc. cit.,* p. 916.

Clotting Defects

8. "In the group of acquired clotting defects there is a haemophilia-like state occurring in females which is due to an anticoagulant in the blood, developed during or after pregnancy, perhaps as an immune reaction. An acute fibrinogen deficiency may also occur with disastrous rapidity in some cases of premature detachment of the placenta, with uncontrollable uterine and sometimes generalized bleeding. It is due to the intravascular entry of placental fragments which cause the removal of fibrinogen from the circulating blood." R. G. MacFarlane, *"The Bleeder";* British Medical Journal; April 30, 1955, p. 1080.

9. "The most dangerous site for tissue bleeding is into the tongue and throat, because any swelling here interferes with the airway, sometimes with devasting rapidity. As soon as it is diagnosed arrangements should be made for the immediate transfer of the patient to hospital, where facilities are available to pass an endotracheal tube." R. G. MacFarlane, *loc. cit.,* p. 1082.

10. "In haemophilia the blood defect can be temporarily corrected by transfusions of several pints of normal blood or plasma, which must be given within a few hours of its collection from the donor, as the active factor is very labile." R. G. MacFarlane, *loc. cit.,* p. 1082.

Causes of Stroke

11. "When a young adult has an unexpected stroke it is proper to search diligently for such causes as tumor, congenital vascular abnormalities, blood disease, embolic disorders, syphilis, and polyarteritis nodosa." *The Lancet,* May 21, 1955, p. 1065.

12. "The theory of the modern kitchen and the labour-saving device is that it suddenly launched women on to new seas of opportunity, oceans of rippling, sun-flecked leisure. And there is no doubt at all that it has absorbed, via the electric motor, a great deal of absurd drudgery which no human being ought to have to do at all. But it now appears that women still have to decide to use wisely the leisure they have gained. And the Senate report seems to say that there is still no electronic escape from the time that should be given to children; and no substitute for the maybe seemingly lazy contact with one's own children. It is not the male tyrant any longer, or the educator, or the intellectual who insists that woman's place is in the home. It is now, heaven help us, the psychiatrist." Alistair Cooke, *Listener,* March 31, 1955, p. 561.

(To be continued)

"Pointers"

From the Case Records of Massachusetts General Hospital 1951*

1. "This extension along the anterior surface without involvement of the intervertebral disks is quite characteristic of tuberculosis, as has been described well by Compere. Involvement of the disk is a very late manifestation in tuberculosis and is not a direct extension from the vertebra, unlike pyogenic infections, in which the disk is less resistant to destruction." Jan. 4, 1951; p. 26.

2. "In an older person one is more likely to find a mediastinal goiter that does not move on swallowing. With increasing age the attachment of the goiter to the larynx becomes more tenuous." *loc. cit.;* p. 28.

3. "We occasionally see patients in severe diabetic acidosis who have little or no ketone bodies in the urine, when there have been large amounts of ketones in the blood, as indicated by a simple test that uses acetone powder with serum several times diluted. It usually occurs with severe oliguria, and I have supposed it meant inability of the kidneys to excrete ketones." *loc. cit.;* p. 103.

4. "Unlike the sexual disturbances in diabetic women, which appear to have a hormonal basis, the sexual disorders of diabetic men are primarily neurologic in origin." *loc. cit.;* p. 107.

Call For Bed Pan

5. "Serious pulmonary embolism is often associated with the feeling of abdominal distention and a call for the bedpan." *loc. cit.;* p. 228.

6. "Soon after the onset of a dissecting aneurysm of the aorta the patient may show a normal hemoglobin and white count." A composite; *loc. cit.;* p. 228.

7. "In about 100 cases of metastatic disease to the lung about 20 per cent involved the bronchus; in about 6 or 7 of those we could actually see tumor within the bronchus. This is unusual in carcinoma and more common in sarcomas. What probably happens is that there is metastasis to the parenchyma or to a lymph node, which then invades the bronchial wall." *loc. cit.;* p. 232.

8. "Pregnancy tests are negative in about 25 per cent of cases of ectopic pregnancy." *loc. cit.;* p. 376.

Aspiration Biopsy

9." Aspiration biopsy of vertebral bodies is relatively safe and in some cases is a satisfactory way of making a diagnosis, but the anatomical location of the lesion is most important. From the ninth dorsal vertebra distally, the aspiration can be made with relative safety; from the ninth up to and including the first dorsal vertebra, it is a procedure that should be undertaken only with extreme caution, and perhaps should not be undertaken at all." *loc. cit.;* p. 483.

10. "A hypernephroma may be causing obvious metastatic bone disease yet because of its location and size be undiscovered by intravenous and retrograde pyelogram." A Composite; *loc. cit.;* p. 484.

11. "My department (pathology) is usually notably reluctant to try to name the primary site of metastatic tumor; it is very seldom that we can be persuaded to commit ourselves." *loc. cit.,* p. 484.

12. "Although we believe that after a negative dilation and curettage the patient cannot have a carcinoma of the endometrium, we have been fooled time and again. Carcinoma lurking in one corner of the uterus or at the base of a flat polyp may be missed even though the curettage is very thorough." *loc. cit.;* p. 525.

(To be continued)

*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. They will appear regularly and cover the years 1951 through 1955.

Aphorisms Concerning Chest Diseases—Hemoptysis

By E. S. Crossett, M. D., El Paso

1. Expectoration of blood usually frightens a patient and prompts him to consult a physician. This is fortunate, as hemoptysis is frequently due to serious disease and is the early sign which can lead to an early diagnosis, if proper diagnostic studies are carried out promptly.

2. Every patient who complains of hemoptysis should have a chest X-ray without delay. This frequently will reveal evidence of the offending lesion. However, a negative X-ray does not exclude the possibility of serious disease.

3. The presence of blood in the sputum decreases the percentage of positive findings, but bloody sputum can be examined satisfactorily for both malignant cells and tubercle bacilli and specimens should be submitted for examination without waiting for hemoptysis to cease.

4. Bronchoscopic examination may be advisable before bleeding has ceased. This may contribute to the diagnosis by finding a foreign body, a bronchial ulcer, a stricture or a broncholith eroding through the bronchial wall. In other cases, a tumor may be found and a biopsy taken.

Bronchograms Valuable

5. Bronchograms are of particular value in cases in which the diagnosis is bronchiectasis. These special X-rays may not only reveal the diagnosis, but are of value in revealing the extent and location of the disease and are of real value in determining the treatment of choice.

6. The most common causes of hemoptysis are chronic bronchitis, neoplasms of trachea or bronchi, tuberculosis, bronchiectasis, lung abscess, pneumonia, pulmonary infarction, broncholithiasis, foreign body, lung cysts, and congestive heart failure.

7. Rarely is a pulmonary hemorrhage fatal and when death occurs, it is usually due to obstruction of the airway, rather than exsanguination. Emergency treatment should be directed accordingly.

8. Rest, reassurance and mild sedation are usually all the treatment that is required. Depression of the cough reflex by morphine should be avoided. Rarely, emergency pulmonary resection may be necessary and life saving.

(To be continued)

New Mexico Medical Insurance Plan Elects Officers

The medical insurance plan, New Mexico Physicians' Service, has elected Dr. W. H. Peacock as its new President. Dr. Peacock practices in Farmington. He was a member of the committee which investigated health insurance plans for the New Mexico Medical Society in 1954.

Two Albuquerque physicians, Dr. Omar Legant and Dr. Fred Hanold, were elected Vice President and Secretary-Treasurer, respectively.

Serving on the Board of Trustees are the following physicians:

R. P. Beaudette, M. D., Raton; L. L. Daviet, M. D., Las Cruces; F. H. Hanold, M. D., Albuquerque; A. L. Haynes, M. D., Clovis; J. W. Hillsman, M. D., Carlsbad; H. L. January, M. D., Albuquerque; U. S. Marshall, M. D., Roswell; W. L. Minton, M. D., Lovington; H. M. Mortimer, M. D., Las Vegas; W. H. Peacock, M. D., Farmington; R. V. Seligman, M. D., Albuquerque; C. S. Stone, M. D., Hobbs; O. C. Taylor, Jr., M. D., Artesia and J. P. Turner, M. D., Carrizozo.

A determined effort is being made by the leaders of the New Mexico Physicians' Service to provide at reasonable cost protection for those patients who are tempted by offers of "free" government health insurance.

Industrial Medicine Subject of El Paso Post-Graduate School

Industrial medicine will be the subject of the all-day session of the El Paso Branch, Texas Post-Graduate School of Medicine, to be held starting at 8:30 a. m., Sunday, October 7, in the El Paso County Medical Society's Turner Home at 1301 Montana Street in El Paso, Texas.

Physicians from West Texas, New Mexico, Arizona and Northern Mexico are invited to attend. A credit of seven hours with the American Academy of General Practice will be given those attending the session.

Guest speaker will be Dr. Val C. Baird, Houston, Medical Director of Humble Oil & Refining Co., and President of the Texas Industrial Medicine Association. His two subjects are yet to be announced.

Mr. Smith Pettigrew of Dallas, Medical Co-ordinator for the Texas Employer's Casualty Co., will speak on "Industrial Practice in Relation to the Medical Profession."

Other speakers will be Dr. Leslie M. Smith, of El Paso, "Dermatology of Industrial Origin"; Dr. Robert B. Homan, Jr., El Paso, "Diseases of the Chest of Industrial Origin"; Dr. Maurice P. Spearman of El Paso, "Industrial Ophthalmology"; and J. A. Hancock, Ph.D., Professor of Chemistry at Texas Western College, "Industrial Toxicology".

Film on Cardiac Arrest

The prompt and purposeful action that can restart a heart that has stopped is the subject of a new 20-minute color film, "Resuscitation for Cardiac Arrest." Dr. Claude S. Beck, Professor of Cardiovascular Surgery at Western Reserve University, directed the film produced in cooperation with the Cleveland Area Heart Society under the sponsorship of E. R. Squibb & Sons.

By means of a graphic patient demonstration, the film shows the immediate actions that may restore the heart beat — re-establishment of the oxygen system; the bold opening of the chest; the hand massage of the heart, and the use of drugs and electric shock. Next, the film repeats each step of the "cardiac arrest fire drill" at demonstration speed while Dr. Beck discusses in illuminating detail the medical rationale for each of the steps taken.

The picture concludes with the admonition that the "cardiac resuscitation fire drill" should be carried out at regular intervals in every hospital, for cardiac arrest gives no warning.

Medical groups may obtain the use of prints of "Resuscitation for Cardiac Arrest" without charge by writing to Squibb, 745 Fifth Avenue, New York 22, N. Y.

MEETINGS

Partial List of Speakers For Southwestern Medical Association Meeting Announced

Dr. W. E. Nissen of Albuquerque, chairman of the speakers committee for the annual Southwestern Medical Association meeting in Albuquerque, N. M., October 17-19, has announced the list of speakers for the meeting as follows:

W. B. Bean, M. D., Professor of Internal Medicine and Head of the Department, University of Iowa Medical School.

Stephen Rothman, M. D., Professor of Dermatology, and Head of the Section of Dermatology, University of Chicago Medical School.

John Bigler, M.D., Professor of Pediatrics Northwestern University Medical School, and Chief of Staff of Children's Memorial Hospital, Chicago, Illinois.

Colin G. Thomas, Jr., M. D., Assistant Professor of Surgery, University of North Carolina School of Medicine.

Robert H. Barter, M. D., Associate Professor of Obstetrics and Gynecology, George Washington University, Washington, D. C.

Officers of the Association are Dr. John H. Dettweiler, Albuquerque, President; Dr. Celso C. Stapp, El Paso, President-Elect; Dr. E. W. Lander, Roswell, N. M., Vice President; and Dr. Russell L. Deter, El Paso, Secretary-Treasurer.

Southwestern Dermatological Meeting Scheduled in Albuquerque

The annual meeting of Southwestern Dermatological Society will be held in connection with the Southwestern Medical Association meeting in Albuquerque on Saturday, October 20, 1956.

Dr. Samuel J. Jelso, Albuquerque, President of the Society, has announced that there will be a presentation of dermatological cases in the morning, followed by lunch, after which there will be a discussion.

Arrangements are being made to hold the meeting in the new County Indian Hospital.

Southwestern New Mexico Medical Society to Meet

Dr. Clement C. Boehler of El Paso will speak on "Surgical Technique of a Hysterectomy" at the next regular meeting of the Southwestern New Mexico Medical Society in Deming, N. M., September 12. Dr. Boehler will present 70 slides showing a step-by-step procedure. The Silver City group will be host for the meeting. Dr. W. J. Hossley, Jr., of Deming, is president.

Southwest OB-GYN Speakers Announced

Guests speakers for the sixth annual meeting of the Southwest Obstetrical and Gynecological Society, to be held November 12 and 13 in Tucson, Arizona, have been announced by Dr. Hollis H. Brainard, President, of Tucson. The following will participate in the scientific program:

Bayard Carter, M. D., Professor of Obstetrics and Gynecology, Duke University, Durham, North Carolina.

Franklin L. Payne, M. D., Professor of Obstetrics and Gynecology, University of Pennsylvania, Philadelphia, Pennsylvania.

Ralph A. Reis, M. D., Professor of Obstetrics and Gynecology, Northwestern University, Chicago, Illinois.

E. Stewart Taylor, M. D., Professor of Obstetrics and Gynecology, University of Colorado, Denver, Colorado.

Headquarters for the meeting will be at the Arizona Inn. Reservations are to be made directly with the Arizona Inn including time of arrival and departure.

Other officers of the Society are Dr. Lewis A. McRae, Albuquerque, Vice-President; Dr. Jesse A. Rust, San Diego, President-Elect; Dr. Zeph B. Campbell, Phoenix, Secretary; and Dr. Raymond Jennett, Phoenix, Treasurer.

Members of the Convention Committee are Dr. Raymond R. Bates, Dr. Raymond F. Bock, Dr. Max Costin, Dr. George Fraser, Dr. Richard K. Hausmann, Dr. Gordon J. Hippert, Dr. Howard C. James, Dr. G. Arthur Janssen, Dr. Charles J. Newcomb, Dr. Hermann S. Rhu, Dr. William C. Scott and Dr. LaVern D. Sprague.

Patient Reprints Available

Physicians in District One of the Texas Medical Association may obtain for their patients reprints of "Heart Attack," published by the American Heart Association, by writing Victor Fayant, Executive Secretary of the West Texas Heart Association, P. O. Box 1360 in El Paso.

PEDIATRICS

Poliomyelitis-Tonsillectory-Year 1949

Cunning, D. S., Laryngoscope 60:615, 1950

Based on a 4-year study involving 36,678 cases of polio and 96,379 cases of tonsillectomy, it is concluded that no causal relationship exists between poliomyelitis and tonsillectomy. The author suggests postponement of elective surgery during any epidemic, but tonsillectomy need not be deferred simply because the incidence of polio is elevated during summer months.

Clinical Clippings, December, 1950.

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

July 19, 1956

FREDERICK P. BORNSTEIN, M. D., EDITOR—CASE NO. 601
PRESENTATION OF CASE BY DR. CHARLES E. WEBB

History — Dr. Nathan Kleban:

A 43 year old Latin-American housewife was admitted in coma on January 15, 1956. Relatives were able to furnish only a fragmentary history.

On October 29, 1954, the patient entered the hospital because of her eleventh pregnancy and delivered uneventfully her seventh living child. No unusual physical findings were recorded. Hemoglobin was 7.0 grams. Pallor and the onset of intermittent painless jaundice were noted four months later. A hematinic and vitamins were prescribed by a doctor. Two days before admission the patient became deeply jaundiced, complained of back pain, bled from her nose, passed dark stools and urine, became delirious and was brought to the hospital when she became comatose.

In 1953 the patient exhibited confusion and memory loss for an unknown period of time. She had been blind in the right eye for approximately three years. Past and family history were otherwise non-contributory.

Physical Examination:

The patient was an emaciated, deeply jaundiced woman unresponsive to painful stimulus. T. 99.0. R. 24. P. 132. B. P. 92/56. The right cornea was scarred. The abdomen was equivocally distended with no masses felt. The examiner was uncertain of a mass in palpating the posterior fornix. Deep tendon reflexes were hyperactive, somewhat greater in the right lower extremity than the left.

Hospital Course:

Because of pharyngeal pooling of bloody secretion a tracheotomy was done. Respirations were deep and moderately increased in rate. Temperature ranged from 98 to 104 rectally. Intravenous fluids and electrolytes, twelve units of whole blood, Tetracycline, Levo-arterenol, vitamin K, Penicillin, sedatives, antispasmodics, and vitamins were administered. A surgical consultant thought he felt an epigastric mass on deep palpation.

An enlarged tender liver, palpable spleen, pallor, jaundice and petechiae were noted by a medical consultant. Increased pigmentation over the malar regions were described. Muscle twitching and jerking were present intermittently. On several occasions the patient became responsive, complained of biting her lips and tongue, and of abdominal pain. Stools were either clay-colored or dark red to black, with several jelly-like in consistency.

One-half liter and one and one-half liters of straw-colored ascitic fluid were removed on two occasions. In addition to increasing ascites, edema appeared in the lower extremities, spread to the trunk. Jaundice steadily increased in intensity. Hyperpnea persisted. On the day before death the patient was awake and oriented. Coma and peripheral vascular collapse preceded death on the twentieth hospital day.

X-ray Examinations:

Portable X-ray of chest: "No significant change from the previous examination (December, 1952). Findings consistent with either acid-fast or metastatic lesion." "Bone survey negative for evidence of osteolytic or osteoblastic metastases."

Laboratory Examinations:

Peritoneal fluid (2 specimens); 50 lymphocytes, protein 1.4, S. G. 1.006, culture, no growth, no tumor cells seen. Urine: consistent presence of bile and absence of urobilinogen, S. G. 1.003-1.006, albumin negative to one plus.

Cholesterol and phosphate crystals, 25-35, RBC/HPF on one occasion. Hemoglobin 5.2, 8.3, 12.0, 7.0 grams; Hematocrit 19, 37, 21; WBC 20,000; 14,700; 19,800. Segs. 83, Lymphs 12, Monos. 5. CO_2 20, 16 meq/L. Blood glucose 191 mg. per cent. Alkaline phosphatase 16.4, 15.2 Bodansky units.

Blood urea nitgoran 15.2 mg. per cent. Serum albumin 2.2, 3.3, 3.8; Serum globulin 3.2, 2.6, 3.6. Van den Bergh direct 7.1, 15.4; total 10.7, 22.6. Cephalin cholesterol flocculation 2 plus in 24, 4 plus in 48 hours. Prothrombin time 100 per cent, 69 per cent.

Kline exclusion negative. Calcium 8.2. Potassium 3.5 meq/L, Sodium 122 meq/L. Febrile agglutinations negative. Coombs test negative. Spinal fluid: no cells, sugar 98 mg. per cent, total protein 27, culture negative.

Bone marrow: erythroid hyperplasia, probably secondary to blood loss. 24 hour stool contained no urobilinogen. Clotting and bleeding time normal. Sputum culture: Proteus, aerobacter aerogenes, strep viridans.

X-ray Discussion — Dr. Vincent Ravel:

The original examination was January 19, 1956. There is not a great deal of change during the series of X-rays. On the original examination we see a patchy infiltration of the lungs which appears partly fibrotic in nature.

Some of the lesions are soft in character, with no nodular consolidation. There is no evidence of an atelectasis, on the original portable examination. This type of infiltration of the lungs may be the result of numerous causes ranging from the tuberculous and fungus lesions to the less common ones and could be carcinomatous infiltration.

These changes may also be the result of multiple lung abscesses with nothing specific about the findings. In this series of portable films it appears that some of the changes may resolve a little bit and perhaps new ones appear.

Lesion

I do not believe this is a metastatic lesion in the lungs, although it may be. Some of the lesions which remain permanently may be the result of pulmonary metastasis, although I am more inclined to think this is an inflammatory process.

Some of the changes appear to be older and caused by pulmonary fibrosis. The heart, as well as we can determine on these films, is not particularly enlarged. There is no particular evidence of a pericardial effusion.

On this last portable examination I get the impression there is widening of the superior mediastinum. I think possibly there is some mediastinal emphysema which may be the result of the tracheotomy tube.

Streaks

There appears to be some widening of the superior mediastinum and those streaks look as if they might be air. The diaphragm is high throughout these three films and that may be entirely due to the inability of the patient to take a deep breath.

The abdomen appears distended on the last film—it looks like an ascites. There is no evidence of intestinal obstruction. I cannot define the kidney shadows well enough or liver or spleen, to comment on their size.

All the visible skeletal structures appear to be intact. I see no evidence of metastasis involving any of the bones or changes in the bones consistent with any other of the leukemias of lymphoblastomas.

There are other X-rays of the skeletal system that are all negative.

Summary

In a brief summary, there are non-specific changes in the chest consistent with several different diseases, ending up with what looks like a superior mediastinal emphysema and ascites.

Differential Diagnosis: — Dr. Charles E. Webb:

The first two cases of this jaundice series were presented by Dr. William I. Coldwell and Dr. Joe C. Carter, and they did a very good job. I have gone over the protocols of these three cases and have written down the significant laboratory results and presenting symptoms of the three cases, and summarized them in the accompanying table (See Table No. 1).

TABLE NO. 1

First Case Common Duct Stone	Second Case Cirrhosis of Liver	Third Case ?
Ceph. Floc.:		
2+ in 24 hours 4+ in 48 hours	4+ in 48 hours	2+ in 24 hours 4+ in 48 hours
Alkaline Phosphatase:		
2.1 Bodanksy units	8 Bodanksy units	16.2 and 15.2 Bodanksy units
Van den Bergh Reaction:		
Direct .75 - 10 Total 7.25 and 17	6 8.5	7.1 - 15.4 10.7 and 22.6
Albumin-globulin Ratio:		
Total 4.6	Alb. 2.6	Alb. 2.2, 3.3 and 3.8
History and Physical Findings:		
Seven year history of sporadic episodes of postprandial distress with radiation to tip of right scapula; Chills and fever for 5 years.	Epigastric distress; Anorexia with belching, abdominal swelling and yellow discoloration of eyeballs.	Painless intermittent jaundice and pallor
Weight loss:		
20 pounds	None	Emaciated

Laboratory Review

In reviewing this table from the standpoint of laboratory findings, we see that in the stone case the cephalin flocculation was 2 plus in 24 hours and 4 plus in 48 hours. As you know, tests for jaundice are of little value in the advanced stage of the disease —they have to be done early.

The cephalin flocculation could indicate either medical or surgical disease. In the case of medical disease, namely, cirrhosis, it was 4 plus in 48 hours. The alkaline phosphatase should be elevated in the obstructive case, but it wasn't in our first case.

The total protein in our case is down but shows the proper relation every time it was taken. Now, the Van den Bergh reaction shows an increase in the obstructive type, as it properly should. The prothrombin time is only available on the cirrhosis case and our case.

Liver Damage

It was severely down in the cirrhosis and fell in our case, indicating liver damage. The interpretation of the urobilinogen represents quite a problem. As you will remember, Dr. Carter reminded us at the last meeting that you can have a negative urobilinogen if the damage to the liver is severe enough so that bile secretion has stopped completely.

The findings in the stool suggested total obstruction in the first case and in our case, where they have been reported as clay-colored. Now, going to the synopsis of the history and physical findings, you can

see that these are most important items of consideration.

Diagnosis

I think from them alone you almost can make a diagnosis on these three cases. The common duct stone had a history of seven years of post-prandial pain with radiation to the right scapula. The cirrhosis had epigastric distress and no real pain but anorexia and belching and swelling of the abdomen. The last case had no pain, with intermittent painless jaundice.

Five Year History

The common duct stone had a five year history of chills and fever; there were no chills and fever in the last two cases. The weight loss in the first case was 20 to 30 pounds. There was no weight loss in the cirrhosis case. This goes along pretty well with medical jaundice. The last case was emaciated.

The intake of alcohol in the first case I think was supposed to be moderate, although I think ten beers a day sounds like a pretty good intake to me. There was a history of heavy alcohol intake in the cirrhosis case, there was no history of alcohol intake in the last case.

The main outstanding points in the history of the last case are: pallor, intermittent jaundice, and emaciation.

No Palpable Masses

On physical examination in the common duct stone no masses were palpable. In the cirrhosis case the liver was felt four finger-breadths below the costal margin and in this last case one surgeon thought he felt an epigastric mass, a deep one, and a medical man thought he felt the liver and spleen.

There is no mention of the dates of these examinations. The patient was in the hospital for twenty days, so we do not know whether the last examination was close to, or three weeks later than, the first, but anyway I think it's a little equivocal as to the presence of a mass.

Three points — pallor, painless jaundice, and blood loss — according to the history, were present for at least ten months prior to admission.

Blood Loss

Apparently she was even losing blood farther back than that, so, going back over this chart I think there are more signs in favor of obstructive jaundice than medical jaundice, such as a fairly normal serum protein, a prothrombin time which was normal on admission, and clay colored stools. So I think she had an extra-hepatic obstructive jaundice.

Now, what are the causes of this symptom? First, pancreatitis; second, common duct stone; thirdly, duodenal ulcer; fourth, carcinoma of the head of the pancreas; fifth, peri-ampullar carcinoma.

Red Herring

I am suspecting Dr. Kleban of throwing in a little red herring occasionally, namely, the evidence of bleeding in this patient. Of course, carcinoma of the head of the pancreas may ulcerate into the duodenum and cause hemorrhage, but I don't think this is too common.

Common duct stones of course at times can be painless but usually they have some definite signs of epigastric distress and active symptoms along with their disease. So I feel that this patient had a peri-ampullar carcinoma with spread to the bile ducts, causing cirrhosis in the late stage.

Dr. Maurice C. Davidson:

One factor which suggests carcinoma of the head of the pancreas as a more likely diagnosis is the fact that the blood glucose was very high on the only determination present, suggesting destruction of the pancreas.

Clinical Impression: Carcinoma of the head of the pancreas.

Dr. Charles E. Webb's Diagnosis: Carcinoma of the ampulla of Vater with spread to bile ducts.

Pathological Diagnosis: Carcinoma of the gall bladder with direct extension to the liver and duodenum; duodenal erosion with intestinal hemorrhage.

Pathological Discussion: Dr. Frederick P. Bornstein:

On autopsy we found an extremely emaciated and severely jaundiced woman. The peritoneal cavity contained several thousand cc. of straw colored fluid. On opening the stomach and duodenum we found a very extensive hemorrhage.

We found a bleeding point in the duodenum; on further examination we found a carcinoma of the gall bladder which had infiltrated downward into the duodenum, producing the hemorrhage. In addition, this carcinoma had produced complete obstruction of the common bile duct and had directly invaded the liver.

Also present were metastases to the lungs. As is commonly the case, the carcinoma was associated with a stone.

Histologically, this was a rather anaplastic adenocarcinoma. The other important histological finding consisted of extreme necrosis and destruction of the liver tissue due to the long-standing obstructive lesion.

Uniformly Fatal

In the last few years we have seen a considerable number of carcinomas of the gall bladder which have proven uniformly fatal, regardless of whether the gall

bladder was removed surgically or whether the carcinoma was found at autopsy. The carcinoma of the gall bladder has a tendency towards immediate invasion of the liver, which makes surgical eradication nearly impossible, and in addition, distant metastases occur at an early stage.

It is interesting to note there is a general assumption that in carcinoma associated with obstructive jaundice, we are generally dealing with a carcinoma of the head of the pancreas. This has not been borne out by our experience.

Large Incidence

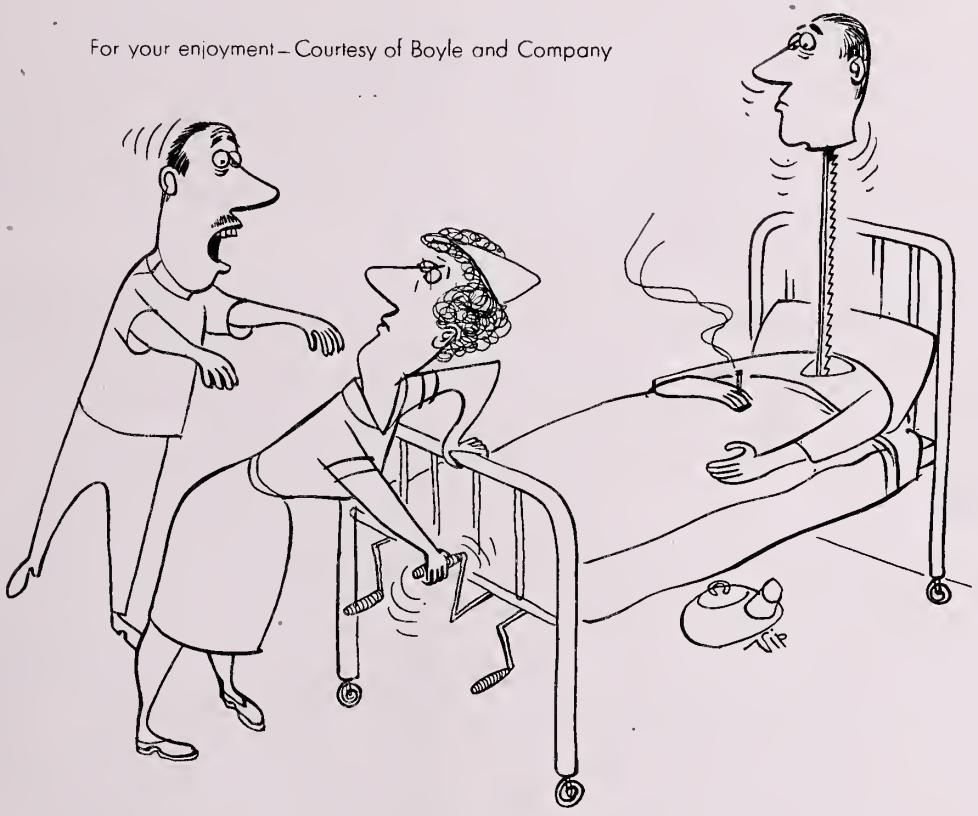
We have seen a great number of primary hepatomas, common duct carcinomas, and gall bladder carcinomas, which represent a larger incidence of carcinoma than that found in the head of the pancreas.

This is also pointed out in Willis' text book on the pathology of tumors. As a final remark to this series of cases of jaundice, I would like to say that in the 1300 autopsies which I have performed in the last four years, there were about fifty cases in which death was due to jaundice.

Two Operable Cases

Thirty-five of these cases belong to the group of cirrhosis and hepatitis. The rest were various carcinomas. We only had two operable surgical cases such as stone or stricture producing fatal jaundice. All the other surgical jaundice cases which entered the hospital evidently went home. The only fatal surgical cases are the relatively small groups of carcinomas, while the rest of the fatal cases are due to medical jaundice.

For your enjoyment—Courtesy of Boyle and Company



"Not that crank, O'Brien!"

ORIGINAL ARTICLES

Management of Hand Injuries*

By Keith A. Walker, Lt. Colonel, MC,
William Beaumont Army Hospital, El Paso

In the United States each year there are over 10,000,000 accidental injuries. Over two million of these are occupational injuries. Approximately 35 per cent of these occupational injuries involve the upper extremity with approximately 30 per cent of the total involving the hand alone.

Each year the accidental injuries cost in excess of 10 billion dollars. About a third of this amount is for occupational injuries so about one billion dollars each year represents the cost for occupational injuries alone in which the hand is involved. (These figures were obtained from the National Safety Council).

In times of combat or mass casualties the incidence of hand injuries appreciably increases.

British Report

Clarkson reporting on the accident service of Guys Hospital in London, England, indicates that 3,000 of 11,000 annual accident cases seen in that hospital are injuries of the hand.

I do not have accident statistics for William Beaumont Army Hospital, as many of our cases are never admitted; but certainly in a group of active young men working with their hands such as we have in the military, I would expect the incidence to be as high or higher than in civil life.

In consideration of injuries to the hand with particular regard to their management several important factors must be kept in mind. These are:

1. Type of and mechanism of injury such as:
   Laceration
   Crushing
   Avulsion
   Blast
2. Type of first aid received.
3. Time elapsed between injury and surgeon's examination.

These three factors must be evaluated and weighed in consideration of the primary aim of the surgeon, namely, the return of maximum function to the injured hand.

Requirements

The requirements for maximum return of function are:

Freedom from infection.
Proper surgical repair of wounded tissue.
Prevention and elimination of contractures.

These precepts then form the principles of treatment. Let us now discuss them in more detail.

To accomplish freedom from infection, or to keep it minimal, in wounds of the hand it is obvious that the badly damaged, mangled hand, which was crushed by a dirty set of gears and in which there is much contamination is a far different problem from the cleanly incised wound sustained by a housewife when she cuts her finger on a sharp knife while washing dishes in her kitchen sink.

Different Problem

The patient who is seen immediately by experienced first aid technicians and whose wound is covered with a sterile dressing and then sent immediately to the surgeon is a far different problem from the patient who has been delayed six to eight hours before seeing a surgeon. The wound which has been inspected by many examiners under other than sterile conditions, which has been probed, or as happens so many times, has been infiltrated with local anesthesia then probed and dissected in the local dispensary or batallion aid station before being sent to the surgeon for definitive treatment becomes an exceedingly complex problem.

Before the advent of antibiotics six hours was considered the maximum time in which definitive repair in the hand should be performed and two hours the maximum elapsed time that initial repair of flexor tendons within their sheaths should be accomplished.

Time Limit Extended

Since the use of antibiotics this time limit has been extended. Elapsed time is still a valuable consideration in evaluating the amount of definitive surgical treatment to be given initially, however, other factors too must be considered, namely, degree of contamination and amount of tissue damaged, skin available for primary closure, associated fractures, general condition of the patient, availability of operating facilities and availability of qualified trained professional assistance and anesthesia.

Considering all of these factors the general policy here at William Beaumont has been this:

1. Cleanly incised wounds of the hand without associated fractures or tendon involvement may be closed up to 24 hours.

2. Clean incised wounds with extensor tendons involved may be repaired and closed up to 12 hours. Clean incised wounds with involvement of flexor

* From Symposium on Surgery in Acute Trauma delivered at William Beaumont Army Hospital, April 1956

tendons within their sheaths may be repaired up to six hours after injury providing the wound has not been probed, sutured or otherwise complicated prior to being received here.

3. The badly crushed, grossly contaminated injuries to the hand have to be carefully evaluated on their own merits and no fixed guide can be established. Battle wounds for the most part fall into this category and factors learned in World War II and Korea can be applied to these cases. Some of these factors are:

a. The dictum of, "Save as much as possible."

b. "Never remove anything that has a chance of survival."

c. "Do not sacrifice skin or bone, fillet any devitalized finger and save skin for coverage."

d. "Cover the tendons and bone if at all possible but do not close the wound tightly."

e. "Apply good post operative immobilization but do not immobilize *too* long."

Having considered in general factors involved in handling of hand injuries let us now proceed to more specific details.

First Aid

The first aid care of a wound of the hand consists of application of a sterile compression dressing. This should be adequate to cover the wound and if voluminous can also serve very well as an immobilizing splint. Splintage of the injured hand is important in that it reduces pain and aids in control of hemorrhage, also it decreases the spread of contamination.

Ligation of bleeding points has no place as a first aid measure. Bleeding can be controlled by well applied compression dressings in all cases.

Tourniquets have no place in management of hemorrhage as far as I am concerned.

Rapid evacuation directly to the place of definitive therapy is also important.

Definitive Surgical Care

In the definitive treatment phase the following are to be considered:

1. Bell and Mason (1953) in a report of 112 patients with crushing injuries of the hand, certainly the most shocking type of injury, reported 10 per cent of their cases exhibited degrees of shock sufficient to require transfusion therapy.

2. Rapid and complete evaluation of the extent of injury to the hand. This should be performed under as aseptic conditions as possible, take as brief time as possible but be complete. The extent and type of wounding can be accurately visualized, the viability of parts grossly determined. The division of tendons and nerves can be checked and no examination is complete without survey x-rays.

In examination of the injured hand a few moments spent in gaining the patient's confidence and reassuring him that the examination is of most importance and will not be unduly painful is very worth while. Much valuable information can be obtained and possibly much surgical time and unnecessary exploration can be avoided if complete preoperative examination has been carried out.

Remember the anatomy of the tendons and nerves and the examination is very simple.

3. Having assessed the injury as to location and extent, replace the sterile compression dressing and splint and obtain the necessary history, physical examination and laboratory work.

4. The immediate institution of antibiotic therapy is most important. So many persons are becoming sensitive to penicillin we inquire regularly regarding this sensitivity and then use a broad spectrum antibiotic. The antibiotic is given systematically, there being little indication for topical antibiotics.

5. In all our military personnel a booster dose of tetanus toxoid then 1500 units of tetanus antitoxin is given.

6. Morphine, atropine and a barbiturate are administered as preanesthetic medication.

Anesthesia

Local 1 per cent procaine infiltration anesthesia without epinephrine or nerve blocks of ulnar nerves at the elbow and median nerve at wrist can be used very satisfactorily.

If possible a brachial plexus block gives excellent anesthesia for hand and forearm surgery and will give good anesthesia for several hours. Because of the extension of the second thoracic dermatome on the medial side of the arm occasionally pain from the tourniquet will require additional anesthetic agent.

For the actual definitive surgical procedure good assistants are required. This includes a nurse and at least one qualified assistant. The light should be good, there should be a firm table and stools upon which to sit. All necessary surgical equipment should be available. Lacking these requirements, if no other definitive surgical facilities are available or as many times happens there is a question of competence in the surgeon's mind, the wisest course of action is to very thoroughly cleanse and debride the wound and then close it if it falls within the critera for closing previously outlined. Relying on the fact that primary healing will most likely take place in three weeks or more under more ideal circumstances the definitive reconstruction or delayed primary repair of deep structures can take place. This procedure is a wise course to follow if there is any question as to the degree of contamination or possible infection.

DEBRIDEMENT
This takes place in two phases:

1. Preparing the field — done in the operating room under anesthesia and with tourniquet the sur-

rounding area is gently washed with gauze sponge using water and a mild detergent. This cleansing takes ten minutes by the clock.

A fresh gown, gloves and prep tray are then used for staining the hand as this interferes with good visdetergents are used. I do not use any colored material for staining the hand as this interferes with good visualization of nail bed circulation and also color and viability of tissues.

2. After sterile draping very careful surgical debridement of the wound takes place. This should be sharp debridement and should follow the basic precepts of good surgical debridement. This requires understanding of degree of viability of tissue and an awareness of future reconstruction possibilities.

Conservation of skin is most important. If there is a question about the viability of skin leave it.

Fascia—sacrifice if in question.

Fat—sacrifice if any doubt about being contaminated.

Nerves—leave all possible.

Blood vessels—accurate and complete hemostasis most important.

Bone—leave all possible. If in a clean field it will live, even that detached from a periosteum.

Tendon—remove frayed contaminated tendon. Do not pull down tendons, trim the end and then permit them to retract into clean areas of the hand or forearm spreading contamination.

After adequate debridement comes repair, the following points should be kept in mind.

1. Adequate exposure, this means generous well placed incisions. These incisions should be placed in sites of election or the initial wounds should be enlarged in such a manner as to observe the placing of incisions so scars do not contract. Additional incisions many times are most valuable and should be used.

2. Primary and initial reduction of fractures and adequate fixation is most important. Internal fixation of fractures so that external immobilization devices can be discarded is being used more and more.

3. Nerves—primary repair with 50 black silk is recommended in clean wounds. In septic wounds do not molest nerves. Do not tag the ends, this is not necessary. Sensation in the functioning hand is most important.

4. Tendons—if primary anastomosis can be accomplished, this is to be desired. On extensor surfaces we use 40 black silk. In flexor tendon resection of the sublimis, tendon is usually carried out if primary repair of the profundus is to be attempted. The resected sublimis can be used very effectively if tendon graft is needed. We use braided stainless steel wire for flexor tendon repair.

5. Skin closure—in all clean wounds this is most important, and if conditions are favorable both from time elapsed, adequacy of debridement and ability to personally follow the patient, even battle field wounds should be closed loosely. Coverage of bone and tendon with skin is most important.

If necessary, skin graft should be employed to give cover to the injured hand.

a. The skin graft may be in the form of a split graft (to be used only as a skin dressing).

b. Free full thickness skin graft. Small graft not more than 2 cm. in diameter usually and cut quite thin. This may be taken from the flexor surface of the forearm.

c. Pedicle flap—gives excellent full thickness cover but associated injuries to bone and tendon must also be considered. If good stability of fractures without external fixating devices and if good functional position of the injured hand can be maintained pedicle flaps may be considered.

The use of skin fillet from a severely mangled finger may furnish much valuable skin for coverage.

Shifting local full thickness bipedicle or unipedicle flaps must be kept in mind.

6. Traumatic amputation—conserve as much length as possible, close then by shifting skin and resect the nerves so that painful neuromas do not form. I do not believe that putting nerve ends into drill holes in bone decreases neuroma formation and do not believe that suturing tendons over the ends of bone has any value.

Dressing and Splinting

A resilient compression dressing is applied to aid in hemostasis, hold skin flaps in place, and to aid in keeping edema at minimum.

Splintage in position of function either in plaster splint molded to the extremity or Allen (derby hat) universal hand splint is most important.

Under no circumstances should splintage be continued in excess of 21 days.

More deformities of the injured hand have resulted from too much rather than too little immobilization.

As early as possible active motion of the hand should be instituted; this is the best prevention of contractures.

Summary

Treat hand injuries early and actively. Attempt to keep the hand free from infection and the scar tissue minimal. Always keep the hand in a position of function.

Chlorpromazine (Thorazine) Jaundice

By Daniel H. Goodman, M. D., Phoenix

Chlorpromazine (Thorazine), since its release in this country in May 1954, is being used for an increasingly large number of conditions in practically every field of medicine. One of its most common and popular uses is for its remarkable antinauseant and anti-emetic effects.

It is also used widely in the symptomatic treatment of alcoholism, barbiturate intoxication, and withdrawal symptoms, in bronchial asthma, delirium tremens, epilepsy, hiccoughs, hypothermic anesthesia, hypertension, Meniere's disease, peripheral vascular disease, paralysis agitans (Parkinson's disease), pruritus, psychomotor tension incident to psychotic and psychoneurotic reaction types, and seasickness. It apparently potentiates the effects of certain other drugs, such as narcotics, anesthetics, sedatives and hypnotics.

Depressing Action

Pharmacologically, Chlorpromazine has a depressing action on the central nervous system, with secondary antispasmodic, antihistaminic and adrenolytic activities.[1] It produces a stasis in the biliary tree due to an increase in the resistance of the choledochoduodenal sphincter. Duodenal motility is depressed.

The most serious complication of Chlorpromazine The exact incidence of Thorazine jaundice is not administration has been the occurrence of jaundice. known. It is estimated at about one percent (1%) of those receiving the drug for two weeks. However, since Thorazine is being used so extensively, the absolute number of cases appears to be considerable.

Readily Confused

Since the prodromal and clinical manifestations preceding the jaundice associated with the administration of Chlorpromazine closely resemble and might be readily confused with that of viral hepatitis or acute cholecystitis and cholelithiasis, or an obstructive surgical type of jaundice, it is imperative that this type of jaundice be readily recognized, in order to obviate any unwarranted surgical procedures, which might further damage the patient's health. The jaundice may develop insidiously.

However, usually there is a group of prodromal symptoms, characterized by anorexia, malaise, nausea, vomiting, right upper quadrant or epigastric pain and tenderness, associated with chills and fever up to 103°. Nausea and vomiting will develop even though Chlorpromazine is being taken as an anti-emetic.

Later, the patient will note a dark brown urine, clay-colored stools, tenderness over the liver area, pruritus and icteric sclerae and jaundice.

From the Departments of Medicine of Good Samaritan, Marlcopa County General, Memorial, St. Joseph's and St. Luke's Hospitals, Phoenix.

Laboratory Studies

Laboratory studies after the appearance of jaundice give results similar to those observed in obstructive (surgical) jaundice with but one major difference.

The one unusual, remarkable and diagnostic feature, if found, is that of a marked eosinophilia in the peripheral blood, the eosinophilia being as high as 42%.[2] The eosinophilia is transient and occurs in about 50% of the cases. There is marked elevation of the serum bilirubin level; there is bile in the urine, elevated concentrations of alkaline phosphatase and serum cholesterol, and low excretion of urobilinogen in the urine.

Liver function tests for hepatocellular damage are normal. There are no abnormalities of the cephalin flocculation test, thymol turbidity, the albumin-globulin ratio, prothrombin time or cholesterol esters.

Since Thorazine jaundice presents a clinical and laboratory picture simulating surgical obstructive jaundice, the report of this case is justified, in order that early recognition of this complication be achieved.

Report Of Case

A 42-year-old, white male was first seen on February 24th with complaints of epigastric pain with nausea and vomiting. There was no diarrhea. Temperature was 98.6 degrees. Examination that morning revealed only slight tenderness in the right upper quadrant. There was no rigidity.

The liver was not palpated. That evening, the patient was again seen because of increasing nausea and vomiting, and with a temperature rise of 102 degrees. The pain was in the epigastrium and under the sternum, with slight to moderate tenderness in the right upper quadrant.

General physical examination otherwise was negative. The sclerae were clear. The urine was normal. It was the initial impression of the examiner at the time that the patient had an acute cholecystitis. He was placed on broad spectrum antibiotics, antispasmodics, sedation and liquids.

On the following day, the temperature rose to 103 degrees, associated with a chill. The patient was kept on the preceding management for acute cholecystitis, and in several days, the temperature subsided to normal. However, there persisted a marked anorexia with malaise and a weakness out of all proportion to the underlying illness.

Cholecystography

Cholecystrography performed during this quiescent period with no clinical evidence of jaundice revealed a gallbladder to be well-visualized with no evidence of any calculi. The gallbladder emptied well. The

patient was maintained on a low fat bland diet, antispasmodics, and was told to remain at bed rest.

One week later, the patient presented himself with the complaint of increased anorexia, loss of 9 lbs. in weight, marked weakness, malaise, and noted that the urine was extremely dark, like very strong tea or coffee.

Examination of the urine at that time revealed evidence of great amounts of bile and clinically, the patient appeared to be mildly icteric.

On further questioning, it was learned that two weeks prior to the initial onset of nausea, vomiting and pain in the epigastrium, the patient had been taking Thorazine 25 mgm. tid. This medication was prescribed by another physician as symptomatic relief for nausea and a mild anxiety state.

Patient Hospitalized

The patient was hospitalized, and the initial blood count was very revealing. There was an eosinophilia of 40 per cent. The total white count was 9,250. Studies of the liver function revealed the following: Alkaline phosphatase 19.7; thymol turbidity 2.8; cephalin flocculation test negative; cholesterol 471 mgm. per cent; serum bilirubin, direct 4.4 mgm. per cent, indirect 8.8 mgm. per cent; sedimentation rate 30 mm. per hour; prothrombin time, control 12.5 seconds, patient's 13.0 seconds.

The urine contained great quantities of bile; urobilinogen 1:20. The stool was very light, almost clay-colored. The icterus index was 55 units. Sedimentation rate was three mm. per hour.

The patient was placed upon a regime usually prescribed for those with infectious hepatitis. He was at complete bed rest. A diet high in protein and carbohydrates, low in fat, was given. The appetite returned gradually, with a gradual return of weight to that prior to the onset of the jaundice.

Pruritus

Pruritus, which at first was severe and troublesome, subsided with decrease in the jaundice. The liver function tests repeatedly gave elevated readings for the alkaline phosphatase test and serum cholesterol. Thymol turbidity and cephalin flocculation tests were repeatedly normal. The serum bilirubin diminished but slightly, and slowly. The jaundice was clinically manifest for seven weeks, and upon discharge from the hospital, after a total illness of nine weeks, the serum bilirubin was still slightly over 1 mgm. The bromsulfalein test (BSP) revealed no evidence of any parenchymal damage. It was negative.

Comment

It is clearly evident that the jaundice associated with the administration of Chlorpromazine can readily be confused clinically with that of infectious or viral hepatitis, and in its laboratory manifestations with obstructive or surgical jaundice.

The greatest danger lies in the confusion with obstructive surgical jaundice and the needless surgery that may follow. This, of course, has occurred in many cases that are reported in the literature [2, 3]. It is for this very purpose that this case is reported.

Clinicians should become increasingly aware of the danger of jaundice due to Chlorpromazine that needless surgery may be avoided. The depth and duration of jaundice are variable.

Jaundice has remained as long as seven months.

Van Ommen and Brown [2] report one of their cases to be on the way to recovery only after twelve weeks in the hospital. However, the recovery time in this case may have been prolonged by the adverse effect of the surgical procedure on hepatic function. Another of their patients continued to be jaundiced after three months of observation.

No Distinct Relationship

There appears to be no distinct relationship between the mode or amount of Thorazine administered and the onset of jaundice. In most of the cases reported the jaundice appeared after two weeks of Thorazine therapy. However, the author is aware of a case of jaundice following the ingestion of only 50 mg. Thorazine and one following 25 mg. of Thorazine by intramuscular injection.

Chlorpromazine jaundice has features similar to those reported in cases of jaundice associated with Arsphenamine[5] and Methyl Testosterone[6] therapy. The liver biopsy findings are identical to those reported by Hanger and Gutman[5] in jaundice after Arsphenamine therapy. Eosinophilia also was found in some patients with jaundice following Arsphenamine and Methyl Testosterone therapy[6].

Findings

The findings of liver function tests, studies of bilirubin circulation and liver biopsy in patients with Chlorpromazine jaundice indicate biliary obstruction.

Aside from the transitory eosinophilia early in the genesis of the jaundice, and the history of Chlorpromazine ingestion, there is no test that clearly differentiates jaundice due to Chlorpromazine from obstructive or surgical jaundice resulting from other conditions, such as a common duct stone or carcinoma of the pancreas.

Liver biopsy of patients with Chlorpromazine jaundice reveals a characteristic cholestasis in the biliary canaliculi, with no evidence of liver cell damage. The hepatocellular liver function tests remain normal[7] even after prolonged periods of jaundice. The mechanism of Chlorpromazine jaundice is unknown.

The possibility of a hypersensitivity or an allergic state has been hypothesized. However, steroid therapy has been of little avail in the treatment of Chlorpromazine jaundice.

Study In Dogs

A study in dogs has revealed that Chlorpromazine produces stasis in the biliary tree due to an increase in the resistance of the Choledochoduodenal sphincter. These changes appear to be related to the depressing effects of Chlorpromazine on duodenal motility[1].

The treatment of Chlorpromazine jaundice, in addition to immediate discontinuance of the drug, is that of the usual therapeutic program for liver damage—a diet high in proteins and carbohydrates, low in fats, vitamins and bed rest. Antispasmodics and bile salts may be of value in stimulating the flow of bile. Steroids may be tried.

Summary

Chlorpromazine (Thorazine) therapy is not infrequently complicated by an obstructive type jaundice. Clinically, the onset may be manifested by malaise, nausea, vomiting, anorexia, chills, fever with an elevation up to as high as 103 degrees, hepatic tenderness, epigastric distress, dark urine, increasing icterus, and clay-colored stools. The characteristic laboratory finding is, early in the disease, a transient eosinophilia in the peripheral blood, which may reach a height of 40 per cent.

Characteristically, the liver function tests are those of biliary obstruction—that is, normal thymol turbidity, cephalin flocculation tests, albumin-globulin ratio, prothrombin time. The alkaline phosphatase and serum cholesterol are markedly elevated.

There is no evidence of any residual hepatocellular damage. The chief importance of the recognition of Chlorpromazine jaundice is to differentiate it from surgical obstructive jaundice, in order to prevent unnecessary surgery.

The elicitation of a history of previous drug therapy with Chlorpromazine and the finding of a transient eosinophilia are the most helpful and essential factors in the differential diagnosis in establishing the jaundice as being due to Thorazine.

A case typical of Thorazine jaundice with a high peripheral eosinophile count is described.

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CLINICAL NOTES FROM GRAND ROUNDS

These notes are abstracts of opinions expressed by staff members during case presentations at the Friday Grand Rounds of the Pratt Diagnostic Clinic—New England Center Hospital.

Steatorrhea occurring in males past middle age in association with rheumatoid arthritis should call the possibility of Whipple's disease (intestinal lipodystrophy) to mind. Other cases of steatorrhea may be caused by pancreatitis; in these there is usually a history of alcoholism or biliary tract disease and there may be an associated diabetes. In sprue, steatorrhea also may occur; diarrhea is not always present but the stool is bulky. Exacerbations in sprue are apt to follow infections and emotional stresses. Treatment of sprue is fairly successful with folic acid, liver extract, and cortisone or ACTH. It is a lifetime disease characterized by remissions and exacerbations.

✤

Aldosterone, a recently identified hormone of the adrenal cortex, has been found to have a marked effect upon sodium (and water) retention. The secretion of this hormone in man is only partially controlled by corticotropin (ACTH). Salt depletion causes an increased production of aldosterone; potassium depletion has an opposite effect. Since this hormone is not completely under pituitary control, it is now clearer why patients with pituitary insufficiency often do not show clear evidence of adrenal insufficiency.

OTOLOGY

The Prevention Of Deafness

Walls, E. G., New Orleans M. & S. J. 103:74, 1950

In his discussion the essayist mentions heredity as an etiologic factor in some types of deafness. If both mother and father are otosclerotic the condition may be expected to develop in 50 to 75 per cent of sons and almost all daughters of such parents. The observation that onset of otosclerosis frequently coincides with emotional and physical stress warrants consideration.

Clinical Clippings, November, 1950.

RHEUMATIC FEVER—PARA-AMINOBENZOIC ACID

Hoagland, R. J., Am. J. Med. 9:272, 1950

A patient with rheumatic fever who was refractive to 10 Gm. of acetylsalicylic acid daily as evidenced by persistence of fever for five weeks, experienced immediate and pronounced improvement following supplemental use of para-aminobenzoic acid in doses of 24 Gm. daily.

Clinical Clippings, November, 1950.

Cardiac Arrest

By Manley B. Cohen, M. D., El Paso

Cardiac arrest is a seldom seen accident at surgery, but its occurrence is catastrophic. The time is rapidly approaching, in truth if it is not already here, when the physician may be considered culpable if prompt resuscitative measures are not instituted. Every physician doing the simplest operations should be thoroughly familiar with the proper treatment. Some clinics report as much as 30-40 per cent resuscitations. (1)

Starling and Land (2) in 1902 reported the first successful cardiac resuscitation in man. Crile and Dolley (3) in 1906 suggested artificial respiration be used with cardiac massage. Beck (4) in 1947 reported the first successful defibrillation of the human heart by electric shock.

Immediate Recognition

Successful therapy is dependent entirely on immediate recognition of cardiac arrest. A positive and bold attitude on the part of both the surgeon and anesthesiologist in the institution of resuscitative measures is imperative and must not be delayed. Resuscitation is equally dependent on restoration of an adequate airway and administration of oxygen, and institution of cardiac massage.

Proper cardiac massage through the intact diaphragm can hardily be performed. To be sure, successful massage can be carried out in this manner. In fact, the first successful cases were resuscitated in this manner. It is understandable that for the surgeon in the midst of an abdominal operation, cardiac massage through the diaphragm may appear feasible. However, it does take time to make a new abdominal incision or extend one already made. Even if the incision is fortunately placed and sufficiently large, it is necessary to gain exposure of the diaphragm. It must be understood that the prime purpose of cardiac massage is to move blood through the heart and maintain circulation to vulnerable areas (5).

Physical Impossibility

To do this through an intact diaphragm with sufficient rapidity and force for any length of time is physically impossible. Therefore, many surgeons will incise the diaphragm. The exposure necessary for this manoeuvre and for making incision also takes time which can ill be afforded. Furthermore the heart cannot be visualized and drugs cannot be accurately administered and the defibrillator cannot be used.

When one considers that the thoracotomy incision can be made in 10 to 15 seconds, that the heart thus may be directly visualized and grasped in the hand of the surgeon, that the heart is easily available for the injection of various drugs and defibrillation carried out, the advantages of the thoracotomy incision far outweigh any abdominal approach. The argument that many will offer against the thoracic approach is the necessity of a second incision. This must not be considered when the patient's life is in the balance.

Immediate Action

This success of cardiac resuscitation is dependent on immediate institution of the only type of therapy, and it must be complete therapy, that can offer success in the greatest number of cases. We must be prepared to use all possible means in the best manner possible to meet the gravest emergency encountered in the operating room. Either complete therapy is instituted or the chance of failure are so great as to be prohibitive. Cardiac massage must be begun within a period of less than three minutes after cardiac arrest occurs, and the sooner it is done, the better for the patient. No hesitation can be countenanced.

A blood pressure that cannot be obtained, a pulse that is not palpable is all the reason necessary for action. Do not attempt to palpate the pulse or listen to the heart. One easily may confuse his own heart beat or pulse with that of the patient. Do not play with the blood pressure cuff or change it to the other arm. Do not administer artificial respiration. Do not wait for electrocardiograms.

Do not inject epinephrine through the chest wall into the heart. Do not give blood transfusion or arterial transfusion. Do not dilate the rectal sphincter. Do not make an abdominal incision to attempt subdiaphragmatic cardiac massage. Do not attempt intramuscular or intravenous medication.

Do Not Wait

Do not wait for a surgical preparation of the chest prior to making the incision since time is at a premium. The thoracic incision is made through the left fourth or fifth interspaces. Do not stop to count spaces. Since there is no circulation, bleeding from the wound is no concern.

The incision starts at the medial border of the sternum, is extended through the fourth or fifth intercostal space approximately to the mid-axillary line. The incision is quickly deepened through the pleura. The initial opening in the pleura should be done with sufficient care to avoid injury to the underlying lung and heart. Once the pleural space is entered, the pleura can be rapidly divided with scissors or knife.

The cartilage above and below the interspace is then divided to provide more space if necessary. The heart is then grasped in the hand, applying the thumb anteriorly, and the fingers posteriorly, with the apex resting in the palm of the hand.

Massage

Massage is carried out by squeezing the ventricles between the four fingers and thumb in such a manner as to secure as much cardiac emptying as pos-

sible. Pressure should be applied by the fingers by rapidly closing the fingers in a consecutive manner starting with the little finger and against the thumb. Massage should be carried out at least at a rate of 60 per minute, and preferably 80 per minute or more if possible. Proper massage can raise the systolic blood pressure to 60 or 80 mm. of Hg. (5) It is well to inject 1-2 c.c. of 1 per cent procaine beneath the pericardium to reduce heart irritability once massage has been instituted.

Assistant Imperative

Since massage is extremely fatiguing to the hand, it is imperative that at least one assistant is available to spell the surgeon. Massage is continued until autonomous contractions occur. The adequacy of cardiac massage is measured by the ability to determine a good color, a pulse and blood pressure.

If adequate massage cannot be performed through the intact pericardium, the pericardium should be opened. If contractions remain weak, 0.5. cc. of epinephrine 1:1000 may be injected into the right ventricle to help reinforce the contractions.

Massage should be continued for at least 60 minutes (4) before hope is lost of resuscitation. If ventricular fibrillation occurs, inject 5 c. c. of 1 per cent procaine into the right ventricle. Procaine alone may break the fibrillation. If necessary the defibrillator is applied. One electrode is placed in back, the other in front.

Covered With Gauze

The electrodes should be covered with gauze soaked in isotonic saline solutions. Short rapidly repeated shocks (5 to 10) are given using 1.5 amperes with 110 volt alternating current. Shocks should be applied for 0.1 seconds at 1 second intervals. The surgeon should stand well away from the table, and wear rubber gloves to avoid receiving a shock.

The voltage may have to be increased to 130 volts or even 150 volts if defibrillation fails to occur. If the electrodes are large enough, more than 130 volts should not be necessary. An isolation transformer incorporated in the defibrillator unit will guard against electric shocks to the operator. Heart action will stop if defibrillation is successful.

Massage is then continued until supraventricular rhythm is restored. If the heart remains flabby or fails to contract effectively after defibrillation has occurred, heart tons may be increased by injecting 0.5 cc. of epinephrine, 1:1000 into the right ventrile. If epinephrine fails, 1-2 cc. of 0.5 per cent Ba C12 or preferably 10 cc. of 1 per Ca C12 (5) may be injected into the left ventricle.

Chest Closed

When resuscitative measures have been completed, bleeding points are controlled and the chest is closed in an airtight manner while the anaesthetist maintains positive pressure. It is wise to place several pericostal sutures in order to provide stability and approximate the tissues.

The anesthesiologist as already stated plays a role of equal importance to that of the surgeon. Before attempting the thoracic incision, an adequate airway must be established. If an endotracheal tube is in place so much the better. However, it must be carefully checked for kinking, proper placement and tight fit.

If one is not placed, an endotracheal tube should be passed. Since there is complete relaxation, passing the tube should not be difficult or overly prolonged. The tracheobronchial tree is ascertained to be dry or every attempt made to carry out thorough aspiration as quickly as possible. The patient is placed in 10 degrees of Trendelenberg to increase the availability of blood to the brain.

Vagal Influences

In order to counteract any vagal influences, it is wise to give atropine sulphate, gr 1/100 intravenously. The anesthesiologist should assume direction for recording time intervals and for the administration of electrolytes, blood, blood derivatives and substitutes.

When meeting a disaster of the type confronted in cardiac arrest, there is extreme excitement among all the personnel of the operating room, a mass of conflicting orders and no order of procedure unless a definite program has previously been established.

Therefore, every operating room should establish a set procedure to meet this emergency. Personnel must understand the roles they are to play. Nothing can prepare them better than practice sessions. Cardiac emergency kits containing the necessary drugs and instruments should be prepared and kept easily available.

The personnel should include a clock watcher and a recorder in order to keep track of rapidly occuring events. Under conditions where all the staff is ready to meet the emergency, many patients will be resuscitated successfully.

Summary

Cardiac arrest is a reversible process. The most important single therapeutic measure is cardiac massage, and this must be begun within three minutes following this accident. The anesthesiologist must provide an adequate airway, and oxygen for the patient. The most rapid and most satisfactory means of providing cardiac massage is through a thoracotomy wound. Once cardiac massage is instituted, other resuscitative measures may be used if indicated.

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The Cranio-Cervical Injury and Post-Traumatic Headache

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Introduction

Our understanding and treatment of cranio-*cerebral* injuries has advanced greatly in the past 25 years. In our modern day, high velocity society, however, these injuries have become increasingly complex. Often not one, but a series of rapidly occurring blows to the head, as in vehicular collisions, imparts to the skull divers accelerations and rotations. In many of these instances the attachment of the head to the neck is subjected to severe and often damaging stresses.

Frequently after head injuries, patients will complain for a long time of persistent, disabling headache. Usually complete neurological examination in these cases fails to disclose any reason for the headaches. Subsequently, when treatment results in limited or no improvement, these patients are often classified as having post traumatic headache or post concussion syndrome or diagnosed as having neurotic personality. They are thus relegated to a therapeutic blind alley whose end is frustration and continuing disability.

The present study was carried out in an effort to clarify the role played by the neck in the production and character of headache following head injury.

Definition

A cranio-*cervical* injury is one in which a force is applied to the head in such a way that both the head and the neck are injured.

Selection of Cases

Between January 1, 1953 and May 15, 1955, 200 consecutive cases of head injury were studied (with the exceptions noted below.) These included hospitalized and nonhospitalized patients, as well as those seen only for diagnosis and evaluation. All patients under six years of age and those who failed to regain consciousness or who expired were excluded from the study, because of the difficulty of obtaining and evaluating an accurate description of symptoms and physical findings. So called whip-lash injuries were also omitted because demonstrable head trauma was usually absent (these injuries, however, have a great deal in common with those under discussion here, being in a sense, mirror images of them.)

There were 34 females (17 per cent) and 166 males (83 per cent). Ages ranged from six to 72 years. In 88 cases (44 per cent) the injuries were the result of vehicular accidents. The remaining 112 cases (56 per cent) were irregularly distributed among a variety of mishaps such as falls, either from a height or on the level, or being struck by moving objects, including lengths of pipe, clubs and other implements and missiles. Duration of symptoms varied from a few hours to several years. Six of these patients were subjected to surgery, three for subdural hematoma and three for compound depressed skull fracture.

Anatomy

There is no need here to go into a detailed discussion of the anatomy of the head and upper neck. It should be emphasized however, that the function of the neck, viewed mechanically, is to give support and mobility to the head. The latter, weighing in the adult approximately eight to ten pounds, is a relatively heavy anatomical appendage attached to the trunk by the comparatively slender neck. That such a situation does not give rise to symptoms more often is due to the admirably contrived structure of the cervical spine together with its supporting ligaments and muscles.

In this respect there are certain details which warrant closer scrutiny. The integrity and strength of the upper neck and the stability of its attachment to the skull depend to a considerable extent on a group of ingeniously arranged ligaments. These form an interlacing series of inflexible supports between the edge of the foramen magnum, the occipital condyles, the first and second cervical vertebrae and the adontoid process of the latter. Tearing or avulsion of these structures may seriously impair the stability of the head on the neck and diminish the usually accurate alignment and fit between the moving parts. In this way troublesome symptoms and complaints are brought about. It is precisely this group of ligamentous structures which must withstand the stress of excessive and abnormal flexion and rotation of the head, especially where sudden severe applications of force are involved.

History

By definition of course, the history begins with a head injury. The blow may have been severe or not and conciousness may or may not have been lost. The headache may commence within a few moments or may be delayed for several days, rarely longer. Often the headache has its onset or becomes more severe after a hospitalized patient begins to be ambulatory. This latter point is characteristic of the type of headache being discussed in this paper and tends strongly to confirm such a diagnosis.

Many times these patients will have been seen by a number of doctors, subjected to a variety of diagnostic tests and treatments but with little or no relief of symptoms. Frequently they will have been labeled neurotic and their complaints ascribed to a desire for compensation.

Symptoms

Following are listed the symptoms, with indicated frequency, that were found in this series of 200 patients.

1. Headaches	172 patients	(86 per cent)
2. Neck pain	149 patients	(74.5 per cent)
3. Neck stiffness	112 patients	(56 per cent)
4. Dizziness	104 patients	(52 per cent)
5. Tendency toward fainting or passing out spells	51 patients	(25.5 per cent)
6. Shoulder, and/or back pain	48 patients	(24 per cent)
7. Numbness or weakness of an arm or leg	9 patients	(4.5 per cent)

The outstanding symptom was, of course, headache. This was usually localized in the occipital area on one or both sides with involvement of the adjacent upper neck. Sometimes there was a frontal or temporal component and occasionally pain at the vertex was complained of. These headaches were as a rule benefitted by bedrest and were therefore usually absent or improved on arising in the morning. After being up and about an hour or so however, the patient began to be aware of recurrence of the headache and by afternoon it had usually become severe. Another characteristic point was that any muscular effort or exertion or increased turning or twisting of the head markedly aggravated the discomfort. Exacerbation was also brought about by holding the head immobile for long periods as in reading, doing secretarial work or watching television or motion pictures. Riding or driving for several hours at a time was usually quite uncomfortable as well.

Soreness in Neck

Many, but not all of these patients admitted on questioning that there was some stiffness and soreness in the neck. They did not often volunteer such information spontaneously however, because apparently they were under the impression that this was merely a part of the headache.

In addition to the head and neck pain, there were often a number of peripheral symptoms such as dizziness and unsteadiness, nervousness, discomfort in the shoulders and upper back, and a feeling of being about to pass out or faint. These patients also remarked that when they bent over and then straightened up, there was a momentary sensation as though their head were about to explode or come off.

Physical Findings

These were usually meager because of the deeply placed location and the nature of the injured structures and also because of the presence of auxiliary ligaments and muscles which were able to function in a compensatory manner. The great majority of these patients did exhibit some limitation of the various motions of the head on the neck and complained of discomfort when such motions were passively carried out. 125 patients (62.5 per cent) in this series had such findings.

There was also very often tenderness and spasm of the muscle on one or both sides of the upper neck just below their attachment to the skull. This tenderness was usually located about three cm. lateral to the mid line, and was an almost constant finding in those patients who had neck symptoms and complaints. In this series 118 of the patients (59 per cent) had such tenderness and spasm.

On neurological examination there was some alteration in reflexes and sensation in an arm or leg, but this was very unusual, occurring only in six cases (3 per cent) in this series. Neurological changes arising from brain damage were not considered in this study.

X-ray & Electroencephalography

All of these patients had x-rays of the skull and cervical spine. In many instances there was x-ray evidence of fracture of the skull. There were only five cases, however, in which fracture of the cervical spine could be demonstrated. It is seen therefore that obvious radiological abnormalities were not frequent. The findings listed below however, were regarded as highly suggestive that neck injury had occurred.

1. Excessive mobility between any two adjacent cervical vertebrae as demonstrated on flexion and extension views.
2. Absence or reversal of the normal cervical curvature.
3. Eccentric position of the adontoid process.
4. Any degree of dislocation.

Of course such abnormalities as these may have been present previously in some cases, but unless there was good reason to think otherwise they were regarded as evidence of recent injury to the neck. In this series of patients, 55 (27.5 per cent) had one or more of the radiological findings listed above. No myelograms or cerebral air studies were done on any of the patients in this group.

Beginning in June 1954, many of these cases were subjected to electroencephalography. No correlation could be found between intensity of symptoms and electroencephalographic abnormalities.

Diagnosis

As is true of any diagnostic problem, the history, physical examination and laboratory findings were all important in establishing a diagnosis. Usually the history and physical examination strongly suggested what the cause of the symptoms might be, and the x-rays were sufficiently helpful in many cases to be worthy of routine application. The results of treatment were also used retrospectively to confirm the diagnosis and were sometimes the deciding factor in certain questionable and borderline cases. Using all the above criteria it was found that in this series, 136 patients (68 per cent) showed evidence of injury to the neck.

Treatment

During the first few months of this study, after a diagnosis of neck injury was made, the usual treatments were employed. These consisted of cervical traction, diathermy to the neck, application of a cervical collar and analgesic and relaxant medication.

These measures were sufficiently successful to justify their continued use.

Beginning in October 1953 however, injections of hydrocortisone into the upper neck were employed in resistant cases on a trial basis. These proved so satisfactory that they almost completely supplanted the other methods of therapy outlined above. Since that date, 375 injections of hydrocortisone have been given to a total of 84 patients. Out of this group 71 (84 per cent) reported moderate to marked improvement in their headaches and neck pains. Such improvement in many cases has endured to the present writing. In some instances the injections were repeated at intervals of two to twelve weeks until there was no recurrence of symptoms. In the great majority of patients the headaches, along with many of the marginal symptoms, were completely abolished; in many of these, previous treatments had been relatively unsuccessful. The only reaction encountered with the hydrocortisone was mild, temporary discomfort at the injection site.

Discussion

Post-traumatic headache and post-concussion syndrome are well described but poorly understood clinical entities. There is serious question whether or not their continued use in modern day medicine is justified. (Similarly vague clinical concepts like "rheumatism" and "lumbago" have long ago lost their status as scientific medical terminology). They do not correspond to any known pathological lesion, and, as a matter of fact, the only statement than can be made about them with certainty is that they follow trauma to the head. In addition, the phrase, post-concussion syndrome, is self contradictory in that many authorities define concussion as a completely reversible process. There should, therefore, be no sequelae.

Re-Evaluation Needed

Actually the entire matter of persistent headaches following head injury is in need of re-evaluation and revision. Many erroneous concepts are copied unchanged from one text book to another; for example, it is held by many writers that head injury is regarded with particular apprehension by the patient because he knows the tremendous importance of the brain as the organ on which thought, memory, intelligence and emotions depend. In our experience, patients whose heads have been injured are no more concerned or anxious than are those whose hands, backs, or feet have been injured.

It is true however, that *all* of these people become very worried and apprehensive when the attending physician appears unable to make a satisfactory diagnosis or to carry out successful treatment. We feel that the failure of treatment is one of the chief causes for the neurotic symptoms many of these patients exhibit and that these symptoms are a result of this situation and do not justify being represented as a primary diagnosis. Viewed in this light, the head injured patient is no different from any other, neither more nor less concerned.

Component Overlooked

Most modern textbooks completely overlook the cervical component of these injuries and stress the intracranial and psychogenic origins of the patient's symptoms. Symonds[1] in a discussion of headaches following head injuries states that "we are at a loss for a complete explanation of those (headaches) which are post-traumatic." He cites increased intracranial pressure, dilated ventricles, dural and arachnoidal adhesions and vasomotor instability as being factors in the causation of the headaches, but makes no mention of neck injury. Symmonds does note however, that the severity of the brain injury and the intensity of the subsequent symptoms usually bear no quantative relationship to one another; most authors are in agreement on this point.

Questions

Grinker and Wineberg[2] in the same book ask; "How much of this (the head injured) patient's symptomatology is due to actual damage to the brain, its coverings, or the cerebral vasomotor system and how much is a psychological reaction to the trauma or to the organic symptoms?" Again there is no mention of the neck as a possible source of the symptoms. We thus see how compartmentalised our thinking often tends to become.

Merritt[3] in his discussion of the sequelae of head injuries remarks that the headaches may not appear until the patient is ambulatory, a diagnostic point which is almost pathognomonic of headache arising from the neck. He notes that these headaches tend to recur periodically and then tend to diminish and disappear. This has been true of our experience for the most part and usually points toward an organic disorder.

Excellent Monograph

Wolff[4] in his excellent monograph on headache lays more emphasis on extracranial sources of head pain. He calls attention to the fact, frequently forgotten, that patients who have had extensive intracranial surgical procedures rarely complain of headache post-operatively. Since such operations result in almost every type of intracranial pathology that has been cited as capable of producing headaches, it seems reasonable to conclude that such pathological changes are not often the cause of post-traumatic headache. Wolff continues "it is likely that, with the exception of those headaches associated with post-traumatic subdural hematoma and subarachnoid hemhorrages, the chronic headache following trauma to the head results mainly from noxious stimuli originating in soft tissue *outside the skull.*" (italics ours).

Backs Away

After coming so close to the heart of the matter, Wolff then backs away. He declares that the "sustained contraction of skelatal muscles of the head and neck" is on the basis of "sustained resentment, anxiety, frustration and fear" thus leading us promptly back to the psychogenic theory. He does mention

scar formation and abnormal healing in the extracranial soft structures, but does not give such an explanation the emphasis it deserves.

There have from time to time appeared in the literature reports which indicate increasing interest in this problem. McLemore[5] found in his series of 147 maxillo-facial fractures, five instances of complicating fracture of the cervical spine. Since many of his patients did not receive x-ray examination of the neck, the five diagnosed cases represent a relatively large proportion of his series. The same author cites similar findings by Hilger. These reports and others like them however,[6] [7] [8] have not become disseminated through the literature and fail to come to the attention of many of those physicians who are called upon to diagnose and treat these cases.

Forces Involved

In order to appreciate the forces involved in modern day vehicular and industrial accidents, it is necessary to reconstruct as closely as possible, and to indentify the various components of the traumatogenic phase of such accidents. Since photographic records or accurate eye witness accounts are almost never available, the reconstruction must, of necessity, be hypothetical. This involves primarily an understanding of the direction of application of the forces and of their intensity. In this respect, utilization of basic physics is helpful.

Let us take for example, the individual in an automobile which is in a collision so that its forward motion comes to an abrupt halt. If this car is traveling at a rate of speed of 45 miles per hour, the passenger is thrown forward with a force equivalent to a fall from a height of 68 feet. A person in the front seat for instance strikes the dashboard — windshield area in such a way that usually the head makes first contact against the backward sloping windshield. During the succeeding fraction of a second the neck must necessarily undergo great stress and distortion as the patient's body is pressed against the uneven surfaces of the inside of the car while the head is held relatively motionless. In many cases if the automobile is whirled about or overturned, two, three or even four or more of such neck-twistings and strainings may occur. To this may be added one or two more if the patient is thrown from the car.

Violent Impact

If the vehicle is traveling at 60 miles per hour, the force of impact is equivalent to a fall from a height of 121 feet.

The same principle outlined above applies when a patient falls or when his head is struck by a heavy or rapidly moving object. In each instance, the neck is subjected briefly and at least once to a severe disruptive force, often great enough to overcome its intrinsic flexibility and strength. It is at such moments that the injury, now greater, now lesser, occurs.

That it is *this* injury which frequently gives rise to the symptoms following head trauma is strongly suggested by the findings of this study. From the resulting loss of strength, stability and to some extent alignment at the cranio-cervical attachment is derived the sustained reflex spasm of the posterior neck muscles, which in turn results in headache. This theory is supported by the effectiveness of those measures directed toward restoring the strength and diminishing the spasm of the cervico-cranial structures, such as cervical traction, cervical collar and local hydrocortisone injections. So far as is known, the hydrocortisone derives its efficacy by blocking and abolishing those changes in muscle and other tissues which lead to pain. Until more is known, of course, such treatment must remain on an empirical basis. Its success, however, justifies its continued use for the present.

Summary

A series of 200 head injured patients was studied in order to determine with what frequency concurrent neck injury had taken place.

The results appear to justify the diagnosis of cranio-cervical injury in the majority of such patients.

The relationship of neck injury to post-traumatic headache is emphasized.

The mechanism by which the neck becomes injured in these cases is discussed.

A successful treatment for headache following cranio-cervical injury is presented.

Illustrative Case Reports

Case I

This young housewife reported to my office on January 13, 1953 with chief complaint of headache and neck pain. The patient gave a history of having been injured on October 11, 1952 in a vehicular collision. She was riding in the front seat of an automobile and was just straightening up after having retrieved her keys which had fallen on the floor; just at that moment the automobile ran into a truck with such force that the patient was thrown forward through the windshield sustaining multiple lacerations and contusions about the head. Upon her release from the hospital she began to have severe headaches and these had gradually become more severe.

Neurological Examination

The neurological examination was not remarkable. The patient held her head somewhat stiffly on her neck and in a slightly bent forward position. Rotation of the head to the left was limited and resulted in considerable pain. There was tenderness over the middle of the cervical spine posteriorally, and of the upper neck bilaterally.

X-rays were made of the cervical spine and revealed greater than normal angulation at the C5—C6 level. In addition, there was an irregular forward projecting spur on the anterior inferior margin of the body of the 5th cervical vertebra which appeared to have been broken off.

This patient was given daily cervical traction in the office and was fitted with a cervical collar. She became almost asymptomatic under this regime and was released from treatment in one month. From time to time during the next year she suffered a recurrence of her symptoms which responded to a short course of traction.

Case II

This 23 year old white oilfield worker was first seen on May 18, 1953 with chief complaint of headache. The patient gave a history of having been injured on March 21, 1953 when he fell a distance of approximately thirty feet from a derrick. The patient was admitted to Medical Center Hospital in Odessa shortly thereafter and was found to have linear skull fractures in the right temporal area. He recovered quickly and was discharged on the third hospital day. He began to be bothered by headaches which became increasingly severe and failed to respond to the usual measures.

Examination

On examination there were no significant neurological findings. The head was held tilted slightly to the right with the chin somewhat deviated to the left. Rotation of the head on the neck to the left was quite painful and limited as was flexion of the head to either side.

Anterior-posterior x-rays of the upper neck were made and showed asymmetry of the atlanto-axial joint with an eccentrically placed odontoid process.

This patient was given daily treatment consisting of half hour traction to the cervical spine in a horizontal position. He rapidly improved under this program and was able to return to work shortly thereafter. When seen six months later he had remained virtually symptom free and had been able to work the entire time.

Case III

This 20 year old derrick man reported to my office on the 15th of March 1954 with chief complaint of headache. The patient gave a history of having been injured approximately six months previously while working on a drilling rig in Colorado. The injury occurred when the patient was struck heavily across the back of the head by the handle of a heavy piece of equipment. The force of the blow knocked the patient to the floor and he was unconcious for several moments. During the next few hours he began to have very severe headache with discomfort in the neck, and about four hours after the injury suddenly lost conciousness and fell to the floor. He was taken to a nearby hospital regaining conciousness about an hour later. The patient was kept in the hospital for approximately one month and received a considerable amount of cervical traction during this time. Upon being released he continued to receive treatment consisting primarily of pain medication. He continued to be bothered by severe headache and had not been free of pain since the accident.

Examination

On neurological examination the only abnormality noted was marked loss of vibratory sensation bilaterally at the ankle. Rotation and flexion of the head to either side were uncomfortable but not limited.

X-rays were within normal limits.

This patient was given an injection of 1xx. of hydrocortisone into the upper neck on each side. When seen approximately 24 hours later he had marked relief of pain and in 48 hours the discomfort was completely absent for the first time in six months. There was recurrence of headache two weeks later and the injections were repeated. Again there was complete disappearance of the pain and no further injections were necessary.

Case IV

This 41 one year old white male reported to my office on August 16, 1954 with chief complaint of headache, ringing sensation in the head. The patient was injured two weeks previously when a Butane heater blew up as he was attempting to light it. The patient was thrown backward by the explosion so that the back of his head on the right side struck a steel brace on the derrick. The patient was momentarily stunned by the blow, but did not lose conciousness. He received treatment thereafter for his symptoms without any particular relief.

Examination

Neurological examination was not remarkable. Movements of the head on the neck were painful but not limited.

X-rays were made of the cervical spine and were within normal limits. An electroencephalogram was done and was also normal.

A diagnosis was made of sprain of the upper cervical spine on the right. He was given an injection of hydrocortisone into the right upper neck with considerable relief of symptoms in 48 hours. Another injection was given two days later with complete disappearance of symptoms.

Case V

This 27 year old truck driver was seen in my office on December 31, 1954 with chief complaint of headaches. The patient gave a history of having been injured on December 17, 1954 when a heavy chain under considerable tension broke catching the patient about the head and face. He was found by the attending physician to have a fracture of the mandible and was given treatment for this. He was seen in our office because of increasingly severe headaches.

Examination

The physical examination was not remarkable except for some pain and limitation of motion of the head on the neck.

X-rays of the upper cervical spine showed marked dislocation of the adontoid process so that it was

applied closely against the left lateral mass of the first cervical vertebra.

A cervical collar was applied which the patient wore for approximately four weeks. The headache gradually improved during this time and eventually disappeared. He returned to work shortly thereafter and has been asymptomatic ever since.

Case VI

This 30 year old derrick man reported to my office on March 18, 1955 with chief complaints of headache, and dizziness. The patient gave a history of having been injured approximately three weeks before when he was struck heavily across the right forehead by a 20 foot length of two inch pipe. The patient was stunned for several moments by the force of the blow, but did not lose conciousness. The laceration of the forehead was sutured and x-rays were made of the skull and were said to have revealed no fractures. The patient returned to work a few days later but the headaches which had been present since the accident became so severe that he was unable to work for more than a few days. The pain was located in the frontal and occipital areas and was accompanied by a "blacking out" sensation, loss of vision and nausea. Bright light aggravated the headache as did straining, stooping and arising from a reclining position.

Examination

Neurological examination was within normal limits. There was some pain in motions of the head on the neck, but no limitation.

X-rays of the cervical spine revealed no significant abnormalities. An electroencephalogram was done and was within normal limits.

A diagnosis was made of sprain of the upper neck. Two injections of hydrocortisone were given into the upper neck areas bilaterally and the patient was completely symptom free in approximately five days. He returned to work shortly thereafter and has had no difficulties since.

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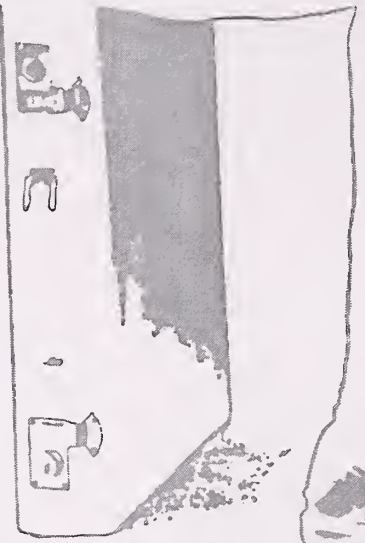
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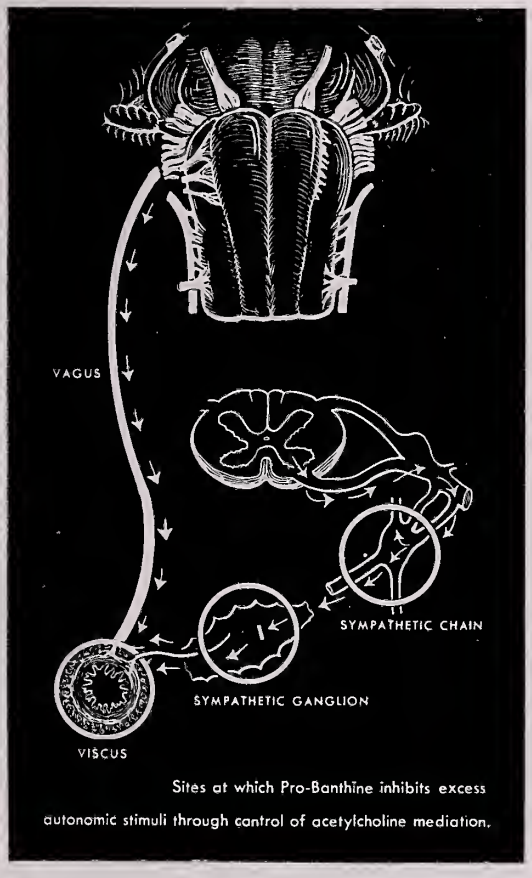
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1. Schwartz, I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: Gastroenterology *25*:416 (Nov.) 1953.

2. Roback, R. A., and Beal, J. M.: Gastroenterology *25*:24 (Sept.) 1953.

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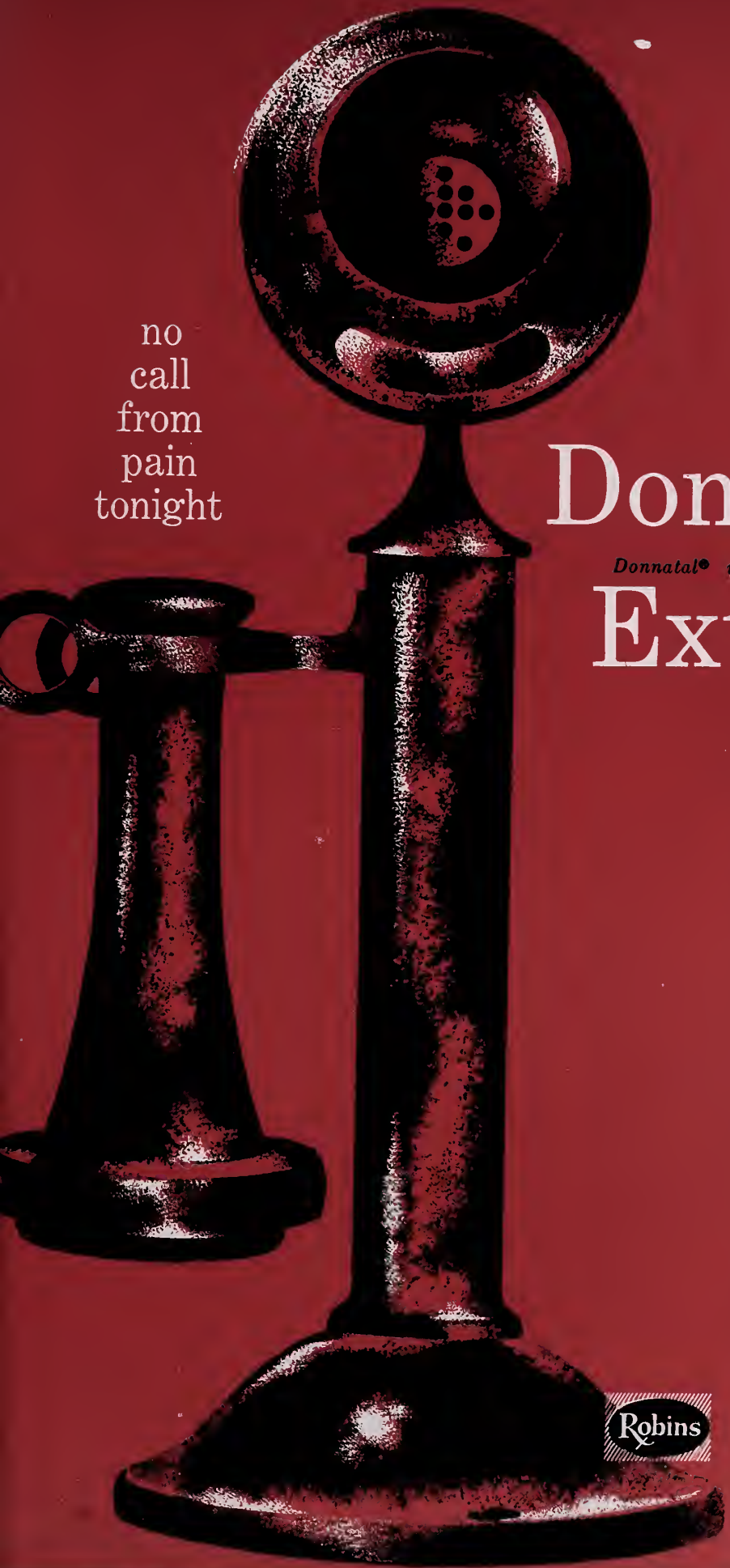
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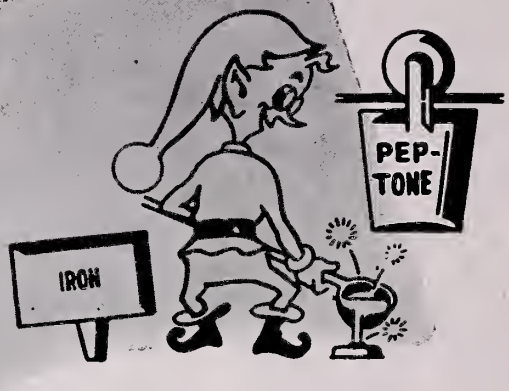
1. Goodman, L. S., and Gilman, A.: The Pharmacologic Basis of Therapeutics, N. Y., The Macmillan Co., 1955; p. 127.

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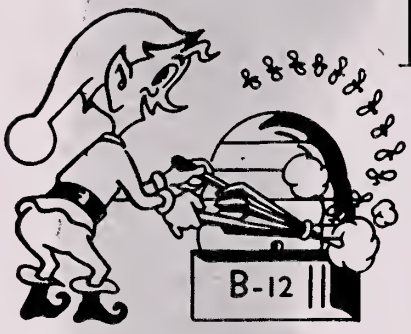
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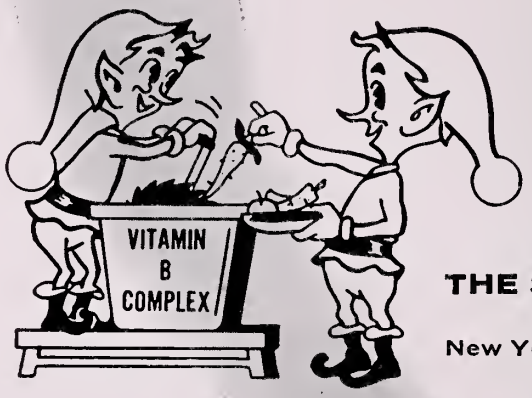


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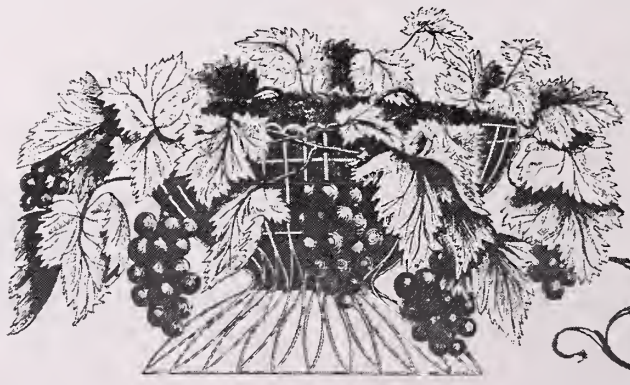


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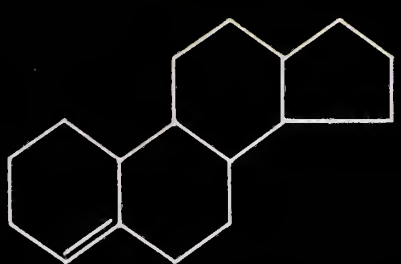
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*Barden, F. W. et al.: Journal of the Maine Med. Assoc. 46:99, 1955.
Cass, L. J. et al.: Journal-Lancet 76:42, 1956.
Smith, R. T.: Journal-Lancet 70:192, 1950.

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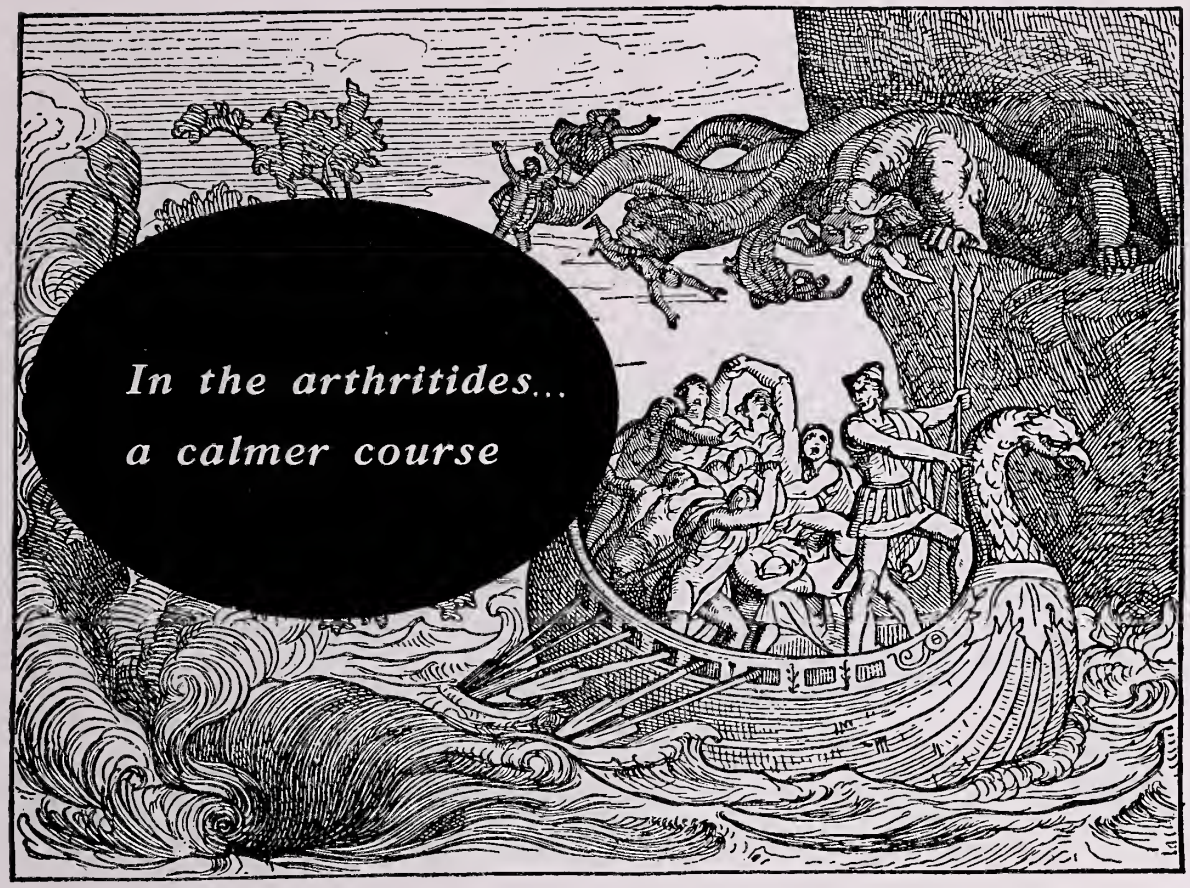
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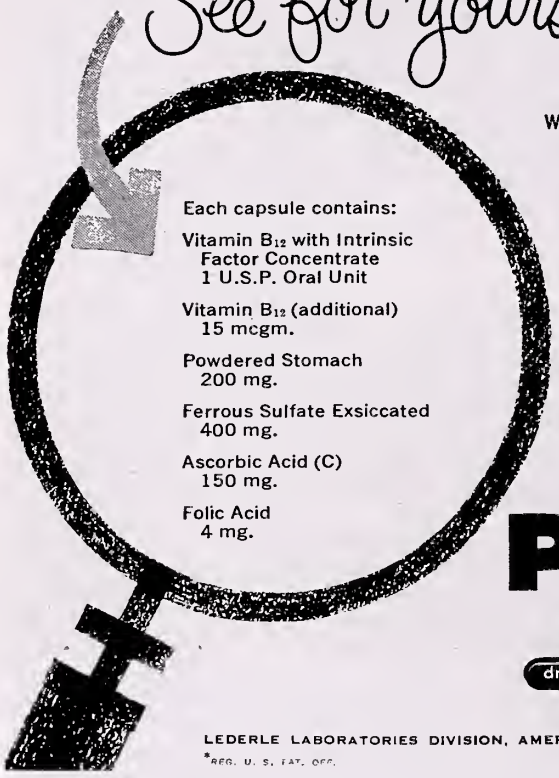
[1]*Busse, E.A.: Treatment of Rheumatoid Arthritis by a Combination of Cortisone and Salicylates. Clinical Med. 11:1105*

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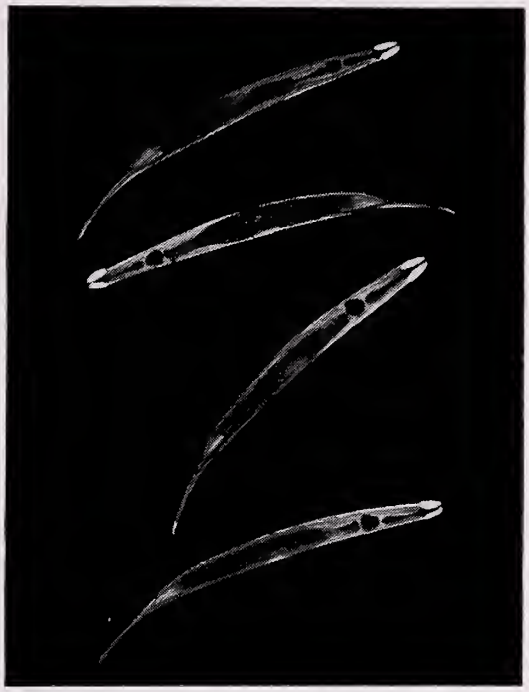
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1. Avery, J.L.: J.A.M.A. *161*:681 (June 23) 1956.

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	Methapyrilene Hydrochloride	8.33 mg.
	Pyrilamine Maleate	8.33 mg.
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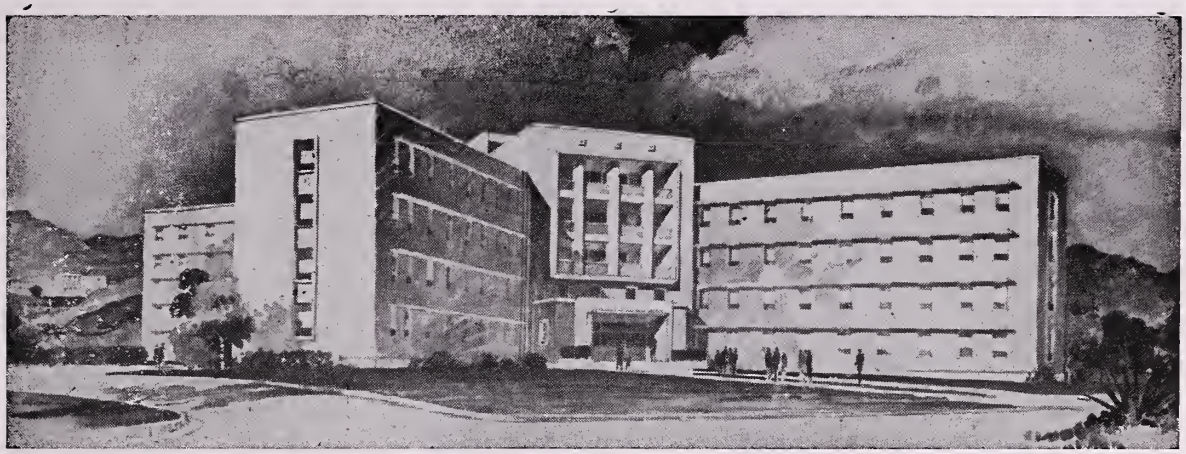
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*Talbot, N. B., Crawford, J. D., and Butler, A. M., "Homeostatic Limits to Safe Parenteral Therapy." New Engl. J. Med., 248, 1100 (1953).

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Southwestern MEDICINE

VOL. XXXVII OCTOBER, 1956 No. 10

EDITORIAL

Social Security Extension

By Robert B. Homan, Jr., M. D., El Paso

Mr. David Lawrence, Editor of *U. S. News and World Report,* has called the late 84th Congress "the most extravagant in giving away the taxpayers money." In appropriating over sixty billion dollars Congress covered, among other things, armament in peacetime (defense), foreign aid, farm aid through a "soil-bank" and "parity", and greatly extended the social welfare program — authorizing the largest amounts of "welfare" money ever voted! Social security "coverage" now exceeds the wildest expectation of the "planners" who originated the U. S. program in 1935.

The law has now been extended to cover another large group of self-employed people — 600,000 additional farm owners and operators, and 225,000 profesionals, such as dentists, lawyers, chiropractors, naturopaths, veterinarians, optometrists, and osteopaths. This action leaves only the Doctors of Medicine and the Christian Science Readers out of the social security tax system! It has been reported that some congressmen have been laying friendly wagers that the M. D.'s will beg for admission within the next year or two! This may be true, although in the 1956 poll of our profession, conducted by the various State Medical Associations, only one state (Massachusetts) voted for compulsory social security "coverage" for Doctors of Medicine.

Widespread Opposition

Despite opposition by insurance companies and actuaries, by many business men, by the medical profession, by rehabilitation experts, and by the Eisenhower administration, the Congress adopted the controversial disability portion of the latest welfare bill. This proposition, which is now the law and is effective as of July 1, 1957, provides for pension payments for total and permanent disability at the worker's age of 50 and beyond. Editorially, Barrons National Business and Financial Weekly states the "case" in this connection most appropriately.

"Of still greater import — is the new provision for disability pensions — a proposal rejected by Congress on at least four prior occasions. Obviously, this opens up a vast and complex field. While only limited costs will be felt for next year, the ultimate outlay is incalculable. For the criteria of disability, however carefully spelled out, necessarily remain fuzzy, compared to such demonstrable facts as age and survivorship. Psychological and economic factors can make one man's partial handicap another's total disability, as private insurors have found out. Administering the law fairly thus will require Solomon's wisdom, and frequent recourse to the courts. Above all, though, looms the danger that cash payments for disability may snowball indefinitely, perhaps at the expense of rehabilitation. For this year's provisions are but the entering wedge. A program that covers only the totally and permanently disabled today can reach out to the partially or temporarily incapacitated tomorrow, as well as to those under 50. Thus the door may be opened to across-the-board Government competition with private health and accident companies.

Still Strong

The push for the Welfare State, then, is still strong in Washington. Americans, a generous and humanitarian people, don't want their aged and disabled to starve. The question, though, is not *whether* to care for such people, but *how*. Ever-mounting federal benefits inevitably spell ever-mounting costs. Already the payroll levy extracts more from some employees with several dependents than does the income tax. And Uncle Sam is under obligation to the young worker and his family no less than to the aged and dependent. It's time to recognize that Santa Claus really is only the taxpayer in disguise and that even his burdens should know some limit."

With this extension of social security benefits, naturally there comes an increase in "social security payments" — also known as taxation — by both the employee and the employer — 2¼ per cent for each on the first $4200.00 of the employees income. For

(Continued on page 588)

CURRENT THERAPY

Oral Hypoglycemic Agents

By Jack A. Bernard, M. D., El Paso

As evaluation of the orally-active hypoglycemic agents proceeds, physicians and patients alike are anxiously awaiting reports of the "oral insulins". Actually these drugs should not be considered as oral insulins as they have no action in the totally depancreatized or in the alloxan diabetic animal and their effect is obtained only when a certain amount of insulin is present, either produced endogenously or supplied by injection.

The compounds under study include Carbutamide (aminophenurobutan — Lilly) and Orinase (tolbutamide — Upjohn). Both are sulfonamid derivatives. Orinase differs from Carbutamide in having a methyl group substituted for the amino group on the benzene ring. Pharmacological difference is the absence in Orinase of a bactericidal action present in Carbutamide.

It is important that we keep abreast of the developments of these and other similar compounds, as they may soon be commercially available, or at least they will be harbingers of more effective oral antidiabetic agents. The present ones are in no way a direct substitute for insulin, and they have been of no value in the juvenile diabetic. The persons most likely to benefit are the adult obese type of diabetic, with a fairly stable diabetes of short duration. Also, they have no value in the treatment of diabetic emergencies and acidosis, as time is needed for their full therapeutic action to develop. Actually, certain cases have shown a hypoglycemic effect after the cessation of therapy.

Therapeutic Results

Carbutamide gives positive therapeutic results in from 50 to 90 per cent of the cases, according to European studies. Dosages of the drug vary according to the patient and the response, but usually between one to three grams initially, and about one gram daily thereafter. After a dose of three grams of Orinase the blood sugar usually falls 20 to 30 per cent in a period of one to four hours and gradually returns to normal after a period of six to twelve hours. The drugs may be given as a single dose rather than in divided dosage.

The mechanism and site of action of Orinase and Carbutamide has not been fully established. It is thought that a major portion of activity may be due to a reduction of the rate of destruction of insulin in the organism.

As sulfonamide derivatives, one would expect the drugs to have antibacterial and goitrogenic effects. Orinase, as mentioned, has no antibacterial effect, and no goitrogenic effect. Also, both drugs are excreted in the urine as highly soluble derivatives and crystalluria has not been observed.

Studies in animals so far have indicated that Orinase is a relatively nontoxic substance, but further studies and investigations are being carried out. Side effects with Carbutamide are being reported and the instance is about five per cent. These side effects include various types of hypersensitivity reactions such as leukopenia, anemia, and skin rashes. More serious hematological reactions may be implicated although this is not yet established.

Indications For Use

As regards indication for the drugs, the prime indication is the adult obese type of diabetic. Approximately a third or more of the diabetics whose disease develops between the age of twenty and forty years have demonstrated a satisfactory response to the drugs, while it seems that those who develop diabetes after the age of 40 do not seem to respond so well. The drugs are of little value in the juvenile type of diabetes.

Because of their limited use and possible toxic effects, these drugs are not yet clinically available for general use and will not be made available until further careful extensive investigation has established their usefulness as harmless oral hypoglycemic agents.

Social Security Extension . . . . .

(Continued from page 587)

the self-employed the percentage is now 3⅛ per cent of the first $4200.00. Now, of course, both the percentage of taxation and the taxable income level can be changed — upward — by any future Congress. How long is it going to take the American people to realize that there is no such thing as federal aid or federal pensions without increased federal taxation? The Government has nothing with which to give "aid" or "pensions" except that which it takes away from all Americans through taxation.

History tells us that nations which have adopted social welfare programs have found state ownership and state medicine a convenient sequence. Both of our political parties have promised further extension of social security. It could still happen here!

Edited by Andrew M. Babey, M. D., Las Cruces, N. M.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

(Continued)

14. "Almost every day the daily newspaper relates the story of an injured child who is rushed to the receiving hospital with screaming sirens — only to be sent home by the intern or orderly in attendance when it regains consciousness or stops crying. A day or two later, when the child is found unconscious, instead of consulting a specialist, the family doctor rushes the child to the hospital, and, like the traditional painting of the physician, sits by the bedside and comforts the parents until the child, with the surgically curable hematoma, finally dies." Emil Seletz; "Recent Trends in Management of Craniocerebral Injuries"; *Journal of American Med. Assn;* June 18, 1955; P. 537.

15. "It is exceedingly rare that any patient with respiratory paralysis needs to be kept indefinitely in a tank respirator. With skillful energetic treatment and support from rehabilitation techniques, almost any patient can be freed from dependence upon the tank respirator within a few months." James L. Wilson, David G. Dickinson; "Prevention of Long-Time Dependence of Poliomyelitis Patients on Tank Respirator"; *loc. cit.,* P. 555.

16. "The physical examination of a patient ill for a long time must never become cursory, and each examination should be as thorough as if it were the first. Always remember that if you miss anything it is not because your intellect is failing, but because you are not on the look-out for it." A. B. Carter; *The Lancet;* April 30, 1955; P. 909.

Cardiacs in Chair

17. "Within the past several months it has been shown by direct catheterization studies that the work of both the normal and the diseased heart is 23 per cent greater in bed than with the patient in a chair with the feet down. It is evident from this that most cardiacs, including those with acute coronary thrombosis, are treated more effectively if kept in a comfortable chair with the feet down than if kept in bed all day." Samuel A. Levine; *Annals of Internal Medicine;* June 1955; P. 1278.

18. "Rarely, the neurological changes in the cirrhotic patient are chronic, and episodes of tremor, confusion, stupor, and coma may occur for years before the correct diagnosis is made. This concept of 'chronic intermittent hepatic coma' has been recognized only recently. In the intervals between the episodes the patient is almost normal." Sheila Sherlock; *British Medical Journal;* June 4, 1955; P. 1383.

19. "Hemoglobin in the urine may appear pink to red as oxyhemoglobin, brown as methamoglobin and black as reduced hemoglobin in large amount. Thomas Hale Ham; *American Journal of Medicine;* June 1955; P. 993.

20. "The finding of hemosiderinuria without hemoglobinuria is consistent with but not diagnostic of intravascular hemolysis and hemoglobinemia of moderate degree. Hemosiderinuria may occur in hemochromatosis. Hemoglobinuria accompanied by hemosiderinuria is diagnostic of hemoglobinemia of more marked degree. Direct observation of hemoglobin and methemalumin in the plasma is pathognomonic of intravascular hemolysis." T. H. Ham; *loc. cit.,* P. 994.

Red Cells Hemolyzed

21. "Red cells will be hemolyzed promptly in vivo by osmotic rupture in urine having a specific gravity of 1.007 or less. In this case hemolysis may be so complete that red cells cannot be detected in the voided sample and the degree of hemoglobinuria may be extreme, suggesting severe intravascular hemolysis. However, if hemolysis occurs in the urinary tract no hemoglobin or abnormal pigments appear in the blood plasma and no hemosiderin occurs in the urine." T. H. Ham; *loc. cit.,* P. 994.

22. "Red cells from any source will hemolyze in urine that remains at room temperature." T. H. Ham; *loc. cit.,* P. 994.

23. "The only valid answers to the problem of the difficult patient are to be found through an inquiry into the negative aspects of the physician-patient relationship. Unconsciously, at least, physicians who complain of difficult patients are guiltier of complicity than is immediately evident. The physician is in the center of a maelstrom of emotions in every clinical situation. He sets both the psychologic stage and the permissible limits for the patient's response. Consciously and unconsciously, he allows his relationship with the patient to promote or repress certain latent dispositions." Howard P. Rome; *American Practitioner;* June, 1955; P. 900.

Various Physicians

24. "The physician who is intolerant of, or personally disturbed by, emotional interplay inadvertently imposes a great burden on his patients. He is tactless under the guise of being honest and direct. He sees little need for the preparation of patients for disturbing news. He gives prognostications and diagnoses to all patients indiscriminately, forgetting that one man's meat is another's poison. He inveighs against what he calls "the patient's weakness" by

recounting in detail the much worse plights of other patients." Howard Rome; *loc. cit.,* P. 900.

25. "The opposite sort is typified by the physician who infantilizes his patient. By suggestion and prescription, he fosters their dependence. Bed rest, vacations and repeated admonitions to "Take it easy" are ordered p. r. n." Howard Rome; *loc. cit.,* P. 900.

26. "The physician who cannot be wrong is another kind of practitioner who imposes serious strictures on his patient's welfare. The patient's requests for information are treated as if they were impertinences. If the patient fails to respond to a therapeutic program as expected, he is told that the fault must lie within himself. He must have failed to obey instructions." Howard Rome; *loc. cit.,* P. 900.

"Pointers"

From the Case Records of Massachusetts General Hospital 1951*

(Continued)

13. "It is often difficult to be sure about the presence of a duodenal or gastric ulcer by examining the outside of the stomach at operation; that is why when a patient is operated on for bleeding and the external appearance of the gastroduodenal segment is negative, surgeons look inside to be sure there is no bleeding point." *loc. cit.;* p. 570

14. "In gastrointestinal clinics, in about 10 or 15 per cent of patients who bleed from the upper gastrointestinal tract the source of the bleeding is never found." *loc. cit.;* p. 570

15. "There is no histologic distinction between the so called epidemic type of hepatitis and that of homologous serum jaundice. The histologic picture is identical in both conditions. Moreover, until we have an experimental animal to which the disease can be transmitted, with protection tests being made, it will be impossible, except on epidemiologic grounds, to distinguish between these two very similar diseases, if they are two diseases." *loc. cit.;* p. 571

16. "A poorly treated diabetic can develop diabetic neuritis very early in the course of the disease." *loc. cit.;* p. 684

10 Per Cent of Pregnancies

17. "About 10 per cent of pregnancies turn out to be abortions; the x-ray findings do not necessarily rule it out, because, although it is quite easy to ask the patient on the table to take a deep breath and hold it, it is very difficult to be sure that the fetus is co-operating. One plain film is not sufficient to eliminate fetal bones. We had a forty-five year old woman at the Peter Bent Brigham hospital with a mass of this size on whom the plain film was negative and the rapid pregnancy test was positive. Another film taken three days later was positive. Apparently at the time the first film was taken, the fetus squirmed and kicked, and its skeleton was blurred." *loc. cit.;* p. 730

18. "In the radiology department of this hospital it has been emphasized time and again that in order to discover a bleeding duodenal ulcer one must make the examination in the acute phase of the ulceration. The maneuver here has been to wait until the patient's condition has become stabilized and then go ahead with the x-ray examination. I think that, countrywide, 25 per cent of the so-called bleeding ulcers have been missed by delayed gastrointestinal series." *loc. cit.;* P. 768

19. "In approximately 50 per cent of cases of subdural hematoma no history of injury is obtained." *loc. cit.;* p. 852

Twilight Zone

20. "The average case of rheumatoid arthritis on the one hand and the usual case of lupus erythemoatosus on the other can be differentiated quite readily, but there is a twilight zone where cases of the two diseases become more and more similar." *loc. cit.;* p. 150

21. "In theory a dissecting aneurysm could start almost anywhere in the aorta; in fact that does not seem to be true. Almost invariably the intimal tear is found in the ascending aorta within a few centimeters of the aortic valve." *loc. cit.;* p. 187

22. "Clubbing is rare but possible with cirrhosis of the liver or with liver disease of any cause. It is also possible but unusual in pulmonary emphysema in the absence of bronchiectasis, bronchitis or other pulmonary disease." *loc. cit.;* p. 225

23. "Liver abnormalities are quite common in association with ulcerative colitis. However, they have proved very variable in type." *loc. cit.;* p. 267

24. "It was rather impressive, in reviewing a series of cases of fatal hepatitis in Army hospitals, to find that at least three patients had entered the hospital on the Neurosurgical Service and had at least a lumbar puncture—and in one instance a cranial exploration for a subdural hematoma." *loc. cit.;* p. 467

*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. They will appear regularly and cover the years 1951 through 1955.

Aphorisms Concerning Chest Diseases
Bronchogenic Carcinoma

By E. S. Crossett, M. D., El Paso

1. The symptoms of bronchogenic carcinoma are in large measure, commensurate with the location of the tumor, its size, and the degree of bronchial obstruction and the degree of secondary infection beyond the site of obstruction.

2. Cough is usually the earliest and commonest symptom of carcinoma of the lung. The onset of cough or change in the character of cough in middle aged persons always should cause concern.

3. Ulceration invariably occurs with enlarging carcinomatous process and may cause bleeding. Hemoptysis should suggest the possibility of carcinoma of the lung as it occurs in about 50 per cent of the patients with pulmonary malignancy.

4. Generally, hemoptysis from pulmonary carcinoma is not profuse, but produces only streaking of the sputum and therefore, may be misleading.

5. Weight loss is a common symptom of this disease and often goes hand in hand with weakness.

Pneumonia and Flu

6. So called "pneumonia" that does not clear up promptly should be looked upon with suspicion. "Flu", from which recovery is slow in a patient past middle age, should suggest the possibility of a carcinoma.

7. The most valuable aid in the diagnosis of lung carcinoma is the cytologic study of sputum and bronchial secretions. If five separate samples are examined, a positive microscopic finding will be present in 80 per cent of patients having a bronchogenic carcinoma.

8. A bronchogenic carcinoma of the lung can be visualized through the bronchoscope and a biopsy taken in approximately 40 per cent of cases.

9. The removal and microscopic examination of the lymph nodes from the supraclavicular area (Scalene node biopsy) often may establish the diagnosis of carcinoma of the lung in patients who have indefinite pulmonary lesions, when other diagnostic measures have failed.

Wide Margin

10. Malignant neoplasms should be removed by as wide a margin as is feasible. Total pneumonectomy with an enbloc removal of the hilar and mediastinal lymph nodes is the best way of effecting this in most instances.

11. On patients with pulmonary and cardiac disability, it is reasonable to perform lobectomy rather than pneumonectomy, provided that the location of the lesion will permit it and the hilar lymph nodes are not involved with carcinoma as determined by examination of frozen sections.

12. Only in cases of small cell carcinoma of the lung are the results of resective treatment uniformly bad. Shaw and Paulson report a 13 per cent a year cure in patients in which pneumonectomy is necessary and a 25 per cent four year cure where lobectomy is performed.

Abstract

Feinblatt, T. M., Feinblatt, H. M. & Ferguson, E. A.: Arteriosclerotic Syndromes, niacinamide hydroiodide (parenteral) treatment, *Med. Times* 84:741 (July) 1956.

In a series of 50 cases of arteriosclerosis, the signs and symptoms which are partly reversible showed significant improvement after treatment for two months with parenteral niacinamide hydroiodide in combination with iodides. There was some alleviation of the condition in every case.

The average age of the patients was 61, weight 157 lb. Significant relief of the following symptoms was observed: vertigo, depression, disorientation, excessive fatigue, vague abdominal distress, headache, emotional instability and anorexia. The medication used was Iodo-Niacin ampuls 5 cc. twice weekly by intramuscular or slow intravenous injection.

No untoward effects were observed and there was not a single case of iodism. Iodo-Niacin ampuls contain a combination of niacinamide hydroiodide with sodium iodide and niacinamide. The rationale of its use depends on the close relationship between iodism and pellagra, both of which are associated with porphyrinuria and impairment of the co-enzyme mechanism.

The action of niacinamide hydroiodide in prevention of iodism is the same as that of niacinamide for pellagra. Reference is made to the report of an ophthalmologist who noted significant improvement of the retinal vessels following use of Iodo-Niacin.

MEETINGS

Southwestern Medical Association to meet Oct. 17-19 in Albuquerque

The Southwestern Medical Association, which has held its annual meeting in Phoenix, El Paso and Tucson, respectively, for the last three years, will have its 38th annual meeting in Albuquerque, from October 17 through October 19.

The meeting will be preceded on October 16 by a regional meeting of the American College of Physicians in New Mexico. The Veterans Administration Hospital in Albuquerque has been selected as the site for this one-day session. Dr. Robert Friedenberg of Albuquerque is Governor of the College for New Mexico.

The annual meeting of the Southwestern Dermatological Society will be held in Albuquerque, Saturday, October 20, in connection with the Southwestern Medical Association meeting. Dr. Samuel J. Jelso, Albuquerque, president of the society, has announced that there will be a presentation of dermatological cases in the morning, followed by lunch, after which there will be a discussion. The meeting is scheduled to be held in the new Bernalillo County Indian Hospital.

Pediatricians to Meet

Pediatricians are having a dinner meeting on Thursday night, October 18. Pediatricians, their wives and friends are invited. The meeting will be in the Alvarado Hotel at 7:30 p. m. Dr. M. K. Wylder of Albuquerque is in charge.

Headquarters for the Southwestern meeting will be in the Hilton Hotel. Dr. J. H. Dettweiler, president of the Association, is in charge of the over-all arrangements. Dr. Dettweiler has announced that members of the Association attending the Southwestern meeting will be entitled to 15 hours credit in Category One training for the American Academy of General Practice.

Speakers Listed

Speakers coming to Albuquerque for the meeting are as follows:

Colin G. Thomas, Jr., M. D., Associate Professor of Surgery at the University of North Carolina School of Medicine.

John A. Bigler, M. D., Professor of Pediatrics and Head of the Department of Pediatrics, Northwestern University School of Medicine.

Stephen Rothman, M. D., Professor of Dermatology and Head of the Department of Dermatology at the University of Chicago School of Medicine.

Galen M. Tice, M. D., Professor of Radiology and Head of the Department of Radiology at University of Kansas School of Medicine.

Robert H. Barter, M. D., Associate Professor of Obstetrics and Gynecology at the George Washington University School of Medicine.

W. B. Bean, M. D., Professor of Medicine and Head of the Department of Medicine at the University of Iowa School of Medicine.

On the social agenda, a stag smoker is scheduled for the night of October 17 and a dinner dance on the night of October 19, with dress informal, both events to be held in the Hilton Hotel.

The Women's Committee has arranged a party Wednesday for wives of physicians in the Albuquerque Country Club, a lunch on Thursday and brunch for Friday. Details on these events will be announced at the meeting.

Second in New Mexico

The American College of Physicians meeting is the second one of its kind to be held in New Mexico. Registration on the scientific session will be conducted at the Recreation Hall of the Veterans Administration Hospital at Albuquerque, New Mexico through the kind offices of Dr. Lester Kanter, Chief Medical Officer of that institution.

Following morning registration, medical rounds will be arranged at Sandia Base Hospital, Veterans Administration Hospital and the Bernalillo County Indian Hospital. The latter institution represents an unique experiment in the care of Indian patients by private physicians. Col. L. B. Hanson, C. O. of Sandia Base Hospital has kindly arranged for rounds at that institution which is an integral part of the nation's activities in atomic energy research and application.

Following hospital rounds in the morning, the meeting will reconvene at 1:00 p. m. in the Veterans Administration Hospital and the scientific program will follow. The papers will approximate 15 minutes in length, except for that of Dr. William B. Bean, Professor and Head of the Department of Internal Medicine at the University of Iowa.

Dinner at Country Club

Following the afternoon session a dinner is planned for the Albuquerque Country Club with Dr. Bean as guest speaker. Payment for dinner will be made at the time of registration. All members of the College and their guests, as well as those who are interested in Internal Medicine, are cordially invited.

Members of the committees in charge of the Southwestern Medical Association Meeting are as follows:

Program Committee:

W. E. Nissen M. D.
Lyle Carr, M. D.
J. H. Burress, M. D.
W. O. Connor, Jr., M. D.

Technical Exhibits:

A. R. Clauser, M. D.

Arrangements Committee:

Roy Robertson, M. D. - Equipment
Bert Kempers, M. D. - Golf
B. F. Roberts, M. D. - Registration
A. R. Clauser, M. D. - Finance
W. O. Connor, Jr., M.D. - Entertainment
A. R. Follingstad, M. D. - Reservations
A. G. Simms, II, M. D., - Luncheon

Ladies Committee:

Mrs. C. M. Thompson, Chairman
Mrs. W. W. Kridelbaugh, Vice Chairman

Scientific Program

Wednesday, October 17, 1956

8:30 a. m.
Registration

10:00 a. m.
Opening of meeting and address of welcome by Governor John Simms.

Morning Session

Dr. Stuart Adler, President of New Mexico Medical Society, presiding.

10:30 a. m.
The Clinical Significance of Common Vascular Lesions of the Skin.
Dr. W. B. Bean

11:15 a. m.
The Nature and Management of Atrophic Dermatitis.
Dr. Stephen Rothman

12:15 p. m.
Luncheon
Medical
Surgical

Afternoon Session

Dr. Robert Friedenberg, President of the Bernalillo County Medical Society, presiding.

2:15 p. m.
Biologic Considerations in the Management of Thyroid Cancer.
Dr. Colin Gordon Thomas, Jr.

3:05 p. m.
Pathology Seen by the Radiologist in the Upper G. I. Tract
Dr. Galen M. Tice

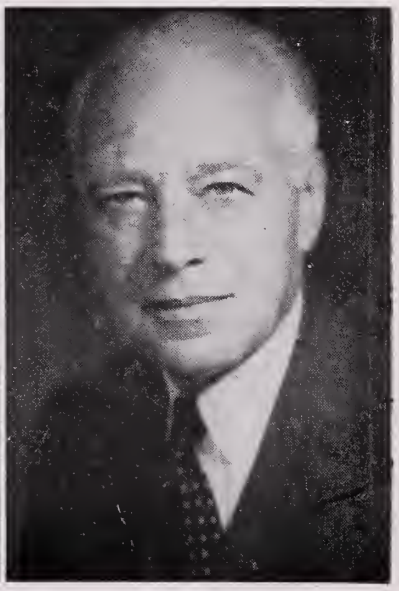
3:55 p. m.
Jaundice in Infancy
Dr. John A. Bigler



Dr. Barter



Dr. Bean



Dr. Bigler

Thursday, October 18, 1956

9:00 a. m.
Business Meeting.

Morning Session

Dr. Celso Stapp, President Elect, presiding.

9:45 a. m.
X-ray Diagnosis in Obstetrics and Gynecology
Dr. Robert H. Barter

10:45 a. m.
Precordial Noises Heard at a Distance From the Chest
Dr. W. B. Bean

12:00 Noon
Luncheon
Medical
Surgical

Afternoon Session

Dr. W. W. Lander, Roswell, presiding.

2:15 p. m.
Doctor's Responsibility in Mental Retardation
Dr. John A. Bigler

3:05 p. m.
Some Interesting Problems in the Treatment of Cancer by Radiation
Dr. Galen M. Tice

3:55 p. m.
Urticarial Diseases
Dr. Stephen Rothman

Friday, October 19, 1956

9:00 a. m.
Business Meeting

Morning Session

Dr. Russell Deter, El Paso, presiding.

9:45 a. m.
Management of Pelvic Relaxation
Dr. Robert H. Barter

10:45 a. m.
Mechanisms of Metastases and Their Clinical Significance
Dr. Colin Gordon Thomas, Jr.

12:00 Noon
Luncheon
Medical
Surgical

Afternoon Session

Dr. J. H. Dettweiler, Albuquerque. presiding.

2:15 p. m.
Experiments in the Induction of Vitamin Deficiency
Dr. W. B. Bean

3:05 p. m.
Surgical Complications of Pregnancy
Dr. Robert H. Barter

3:55 p. m.
Some Pathological Considerations in the Treatment of Gallbladder Disease
Dr. Colin Gordon Thomas, Jr.

Visit Technical Exhibits



Dr. Rothman



Dr. Thomas



Dr. Tice

Technical Exhibitors

New Mexico Pharmacal Co., Albuquerque, N.M.
E. R. Squibb & Sons, New York
SW Surgical Supply Co., Albuquerque, N. M.
Allied Medical Supply, Inc., Albuquerque, N. M.
Eaton Laboratories, Norwich, New York
Parke, Davis & Co., Detroit
General Electric Co., Dallas
Sharpe & Dohme, Philadelphia
Mead Johnson & Co., Evansville, Indiana
Eli Lilly & Co., Indianapolis
A. H. Robins Co., Inc., Richmond, Virginia
Desitin Chemical Co., Providence, Rhode Island
Pet Milk Co., St. Louis
FIF Management Corporations, Albuquerque, New Mexico
G. D. Searle & Co., Chicago
J. B. Roerig & Co., Chicago
Winthrop Laboratories, New York
Lederle Laboratories Division, Pearl River, N. Y.
Ciba Pharmaceutical Products, Inc., Summit, N. J.
U. S. Vitamin Corporation, New York
Lloyd Brothers, Inc., Cincinnati
N. M. Chemical-Surgical Co., Albuquerque, N.M.
National Cash Register Co., Dayton, Ohio
The Coca-Cola Co., Atlanta
Blue Cross, Albuquerque, New Mexico

Regional Meeting of the American College of Physicians in New Mexico Veterans Administration Hospital

Tuesday, October 16, 1956, Albuquerque, New Mexico

Presiding Officer Robert Friedenberg, M. D., F. A. C. P., Albuquerque
Governor for New Mexico

PROGRAM

A. M.

9:15 - 9:45
Registration.

10:00 - 12:00
Hospital Rounds:
Sandia Base Hospital
Veterans Administration Hospital
Bernalillo County Indian Hospital

P. M.

1:00 - 1:30
Registration.

1:30 - 1:45
Clinical Evaluation on the Practicality of Intermittent Dicumarol Therapy.
George Simson, M. D., (by invitation), Albuquerque, N. M.

1:45 - 2:00
Splenectomy in Hematologic Disorders.
Samuel L. Painter, M. D., (by invitation), and E. D. Anderson, M. D., (by invitation), Albuquerque, N. M.

2:00 - 2:15
Endocardial Fibroelastosis in the Adult.
Alan L. Frankel, M. D., (by invitation), and George C. Cheney, M. D., (by invitation), Albuquerque, N. M.

2:15 - 2:30
Lumbosacral Roentgenograms of Three Hundred Soldiers: A Comparative Study.
Murray M. Friedman, M. D., (Associate), Santa Fe, N. M., Frederick J. Fischer, M. D., (by invitation), Detroit, Mich., and Robert E. Van Demark, M. D., F. A. C. S., (by invitation), Sioux Falls, S. D.

2:30 - 2:45
Intermission.

2:45 - 3:00
Bronchogenic Carcinoma Treated with Cobalt 60: A Review of 48 Cases.
Donald B. Stewart, M. D., (by invitation), Albuquerque, N. M.

3:00 - 3:45
Useful Lessons from Rare Diseases.
William B. Bean, M. D., F. A. C. P., Professor of Medicine and Head of the Department of Internal Medicine, State University of Iowa College of Medicine, Iowa City, Iowa

3:45 - 4:00
Review of Serum Protein Determinations by Paper Chromatography.
Charles R. Beeson, M. D., (Associate), Albuquerque, N. M.

Evening

Albuquerque Country Club
(Ladies cordially invited)

6:30 - 7:30
Social Hour.

7:30
Dinner (Informal).
Toastmaster; T. L. Carr, M. D., F. A. C. P.
Address of the Day: "Careers in Medicine."
William B. Bean, M. D., F. A. C. P., Professor of Medicine and Head of the Department of Internal Medicine, State University of Iowa College of Medicine, Iowa City, Iowa.

Program Committee

T. L. Carr, M. D., F. A. C. P., *Chairman*
H. Richard Landmann, M. D., F. A. C. P.
J. R. Van Atta, M. D., F. A. C. P.
Robert Friedenberg, M. D., F. A. C. P., *ex officio*

Southwestern New Mexico Medical Society Meets in Deming, N. M.

Thirty seven physicians and their wives attended the regular meeting of the Southwestern New Mexico Medical Society September 12 at Deming, N. M. in the Rio Mimbres Country Club.

The principal speaker was Dr. Clement C. Boehler of El Paso, who presented an excellent series of slides illustrating his talk on the subject of "Techniques of Abdominal and Vaginal Hysterectomies".

Dr. Boehler was surprised to discover that one of the guests was Dr. John H. Mohardt, Chief of Surgery at the Fort Bayard Veterans Hospital, Fort Bayard, N. M., who was attending surgeon at Mercy Hospital in Chicago when Dr. Boehler interned there many years ago. Dr. Mohardt, while attending Northwestern University School of Medicine, enjoyed the distinction of playing with Red Grange on the Chicago Bears professional football team. A graduate of medical school in 1927, Dr. Mohardt played with the Bears from 1922 to 1926 and from 1919 to 1921 played halfback on Knute Rockne's Notre Dame team. He was an All Western selection and made Walter Camp's second All American team. Following medical school, he had a fellowship at Mayo Clinic from 1928 to 1933.

Next meeting of the Society will be on January 9, 1957, at Deming. The Las Cruces group will be host. There is some possibility that this meeting will be moved to Las Cruces and details will be announced later.

Dr. William J. Hossley, Jr., of Deming, President, announced that the tremendous expansion at Alamogordo, N. M., had resulted in the movement of sev-



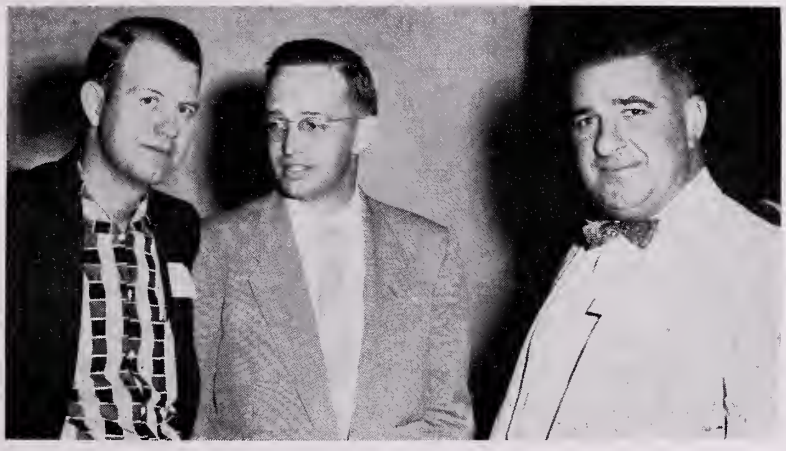
Left to right are Dr. Clement C. Boehler of El Paso, Dr. Warren Hall of Silver City, Dr. Wendell S. Dove of the Veterans Hospital at Fort Bayard, Mrs. Dove and Mrs. Boehler.



Left to right are Dr. I. C. Eldridge of the Veterans Hospital at Fort Bayard and his wife and Dr. and Mrs. John H. Mohardt, also of Fort Bayard.



Left to right are Mrs. T. H. Klunder of Lordsburg, Dr. Ira O. Wilson of Fort Bayard, Mrs. Herman S. Cohen of Lordsburg and Dr. John E. Skaff of Fort Bayard standing in the rear.



Left to right are Dr. C. C. Cobb of Silver City, Dr. Richard A. Walsh of Silver City and Dr. Sidney F. Baker of Silver City.

eral new physicians to that community. The possibility of bringing Alamogordo into the Southwestern New Mexico Medical Society was discussed.

Another guest from the Veterans Hospital at Fort Bayard was Dr. Wendell S. Dove, who has just recently returned from Bogota, Colombia, after having spent a total of 28 years in Central and South America. Dr. T. H. Klunder of Lordsburg, Dr. Warren Hall of Silver City and Dr. Richard A. Walsh of Silver City, all new members of the Society, were introduced.

Other officers of the Society are Dr. C. C. Cobb of Silver City, Vice President; and Dr. Sidney F. Baker of Silver City, secretary-treasurer.

Western Railway Surgeons to meet in El Paso Oct. 24-26

Dr. Dwight H. Murray, president of the American Medical Association, will be the special guest speaker in El Paso October 25 at the annual meeting of the Western Association of Railway Surgeons.

Approximately 150 members of the Association are expected to attend the meeting, which will start October 24 and close October 26. Members of the Association are railway surgeons from the entire western half of the United States.

Dr. E. W. Rheinheimer of El Paso is president and general chairman of the meeting. Dr. Russell Holt, also of El Paso, is chairman of the committee on local arrangements. Headquarters will be in the Hotel Paso Del Norte.

Members of the El Paso County Medical Society will be invited to attend the banquet at which Dr. Murray will speak.

Industrial Medicine Is Subject of El Paso Postgraduate Session

A one-day course in industrial and general medicine will be held by the El Paso Division of the University of Texas Postgraduate School of Medicine Sunday, October 7, at 1301 Montana Street.

The session will start at 8:30 A. M.

Dr. Ralph H. Homan of El Paso is director of the El Paso Division of the Post-Graduate School.

Physicians from all areas of the El Paso Southwest including West Texas, New Mexico, Arizona and Mexico are invited to attend.

The American Academy of General Practice will grant credits to physicians taking the course.

The Program

The day long program with speakers and their subjects includes Dr. Leslie M. Smith, El Paso, "Dermatology of Industrial Origin;" Dr. Robert B. Homan, Jr., El Paso, "Diseases of the Chest of Industrial Origin;" Dr. Robert J. Potts, Dallas, "Preventive Medicine as Practiced by an Industrial Medical Department;" Dr. Maurice P. Spearman, El Paso, "Industrial Opthalmology;" Dr. J. W. Ranier, Odessa, Texas, "Health Maintenance in Industry;" J. A. Hancock, Ph. D., Texas Western College, El Paso, "Industrial Toxicology;" and Smith Pettigrew, Dallas insurance specialist, "Industrial Practice in Relation to the Medical Profession."

TAGP Elects Drs. Oswalt, Schmidt

Dr. C. E. Oswalt of Fort Stockton has been elected vice-president of the Texas Academy of General Practice. Dr. E. W. Schmidt of Pecos and Dr. Cecil French of San Angelo were elected district directors.

Elections were held at the Academy's convention in Houston during September. Dr. G. W. Launey of Dallas is the new president.

Program Announced for Southwest Ob-Gyn Meeting

Dr. Hollis H. Brainard, Tucson, President of the Southwest Obstetrical and Gynecological Society, has announced subjects of guest speakers for the Sixth Annual Meeting of the Society to be held November 12 and 13 in Tucson, Arizona. Speakers and subjects are as follows:

Bayard Carter, M. D., Professor of Obstetrics and Gynecology, Duke University, Durham, North Carolina, "The Vaginal Approach to Pelvic Pathology in Obstetrics and Gynecology", "Endometriosis", "Complications of Obstetric Hemorrhage".

Franklin L. Payne, M. D., Professor of Obstetrics and Gynecology, University of Pennsylvania, Philadelphia, Pennsylvania, "Intra-Cavitary Radium for Benign Uterine Bleeding; A Twenty-Year Follow-Up Study", "Non-Obstetrical Surgical Complication of Pregnancy", "Radiographic Studies of Urinary Stress Incontinence; The Therapeutic Application".

Ralph A. Reis, M. D., Professor of Obstetrics and Gynecology, Northwestern University, Chicago, Illinois, "Diabetes and Pregnancy", "Obstetric Analgesia and Anesthesia".

E. Stewart Taylor, M. D., Professor of Obstetrics and Gynecology, University of Colorado, Denver, Colorado, "Management of Sixty-one Consecutive Patients with a Final Diagnosis of Carcinoma-In-Situ of the Cervix. Review of Results and Discussion of the Election of Hysterctomy versus Conservative Management", "Placental Hormone Studies and Their Relationship to the Causes of Prematurity. Implications of These Findings in Regard to Prevention and Treatment of Premature Labor", "The Adrenal Gland in Gynecological Practice."

Headquarters for the meeting will be at the Arizona Inn. Reservations are to be made directly with the Arizona Inn including time of arrival and departure.

ANTIBIOTICS

Terramycin

Editorial: Wellman, W. E., Minnesota Med. 33:713, 1950

Terramycin is relatively nontoxic. Gastrointestinal irritation is occasionally observed, but such symptoms can be overcome by concurrent administration of milk. It has been demonstrated that milk does not interfere with absorption of terramycin.

Clinical Clippings, October, 1950.

PEDIATRICS

Natal And Neonatal Teeth

Massler, M., et al., J. Pediat. 36:349, 1950

Extraction of natal or neonatal teeth is not recommended unless their presence causes serious difficulty to the infant or mother. If extraction is attempted, consideration must be given to physiologic hypoprothrombinemia present during the first weeks of life.

Clinical Clippings, July, 1950.

ORIGINAL ARTICLES

The Treatment of Histaminic Cephalgia With Antihistaminic Drugs

By Branch Craige, M. D., El Paso

A proposed method of treatment, if it cannot claim infallibility, should have definite advantages over standard methods to compensate for not always being successful. Such is the case with the antihistamine treatment of histaminic headache. Standard treatment with "histamine desensitization", though usually effective within days or weeks, does not give immediate relief. It requires numerous injections the first two or three weeks and occasional injections over a long period of time.

Since oral therapy would have the advantage of convenience, economy, and possibly more immediate effect, a trial with antihistamines was undertaken. The first patient was a cook from a remote ranch in Mexico where injection treatment would have been impractical. The results in this instance were so prompt and satisfactory that a further trial in other patients seemed warranted.

Candidates for treatment were chosen on the basis of the characteristic history.

Diagnosis

One cannot improve on the original description of histaminic cephalgia made by Bayard T. Horton in 1941.[1] The essential features of the affliction are these: The condition occurs almost exclusively in men, usually in the fourth or fifth decades, without family history or other known predisposition. It is a unilateral, rarely bilateral, excruciatingly severe head pain occurring most commonly at night, starting abruptly shortly after the victim falls asleep, lasting only 15 minutes to an hour or so, often eased by sitting up, often recurring when the patient goes back to sleep. There is lacrimation, conjunctival injection and coryza on the affected side. Aura, scotomata, and nausea usually do not occur. The attacks come in clusters, every night, or nearly every night for perhaps weeks at a time. Then an unexplained remission of months or years may occur before the next group of attacks. The pain is so severe that suicide has been contemplated by some of the sufferers.

Horton first separated these cases from the much larger group of migraine or migraine-like headaches. Some[2] still think that histaminic cephalgia is a variant not distinguishable from migraine and does not deserve a separate classification. In the author's opinion it represents a distinct entity. The history is usually clear-cut, definite, and characteristic. Cases where the diagnosis was doubtful have been infrequent. The incidence may be inferred from Table 1. In a practice limited to internal medicine (age 12 and over) almost all patients were questioned regarding present or past history of significant headaches. Two hundred and eighteen gave a history consistent with migraine or probable migraine. Only 20 gave a history of histaminic cephalgia. A glance at Table 1 will show that there was a significant difference in the sex incidence of the two disorders. Almost half of the histamine headaches occurred in males in the fifth decade while most of the migraine patients were females in the third to sixth decades.

Physical examination and routine laboratory findings are not remarkable when the patient is not in an attack. During an attack, the conjunctival injection, lacrimation, and coryza are the only findings. So far as the author knows, autopsy examination has not been obtained.

The usual treatment recommended by Horton[1] and subsequently by most medical textbooks came about as a result of Horton's original study of this condition. He found that the headache was reproducible by injections of histamine, but that in order to continue to reproduce the headache in a given subject, increasingly larger doses of histamine were required. A schedule of two bidaily subcutaneous injections for 10 days to 3 weeks, of small but gradually increasing amounts of histamine diphosphate was rec-

Table 1.

Age and Sex Incidence of Migraine and Histaminic Cephalgia in 7000 Adult Medical Patients

	12—19	20—29	30—39	40—49	50—59	60 and over	Age not Recorded	Total
Migraine								
Male	4	10	10	11	5	2	3	45
Female	5	31	46	47	32	6	6	173
Histaminic Cephalgia								
Male			4	9	2	2	1	18
Female			1			1		2

ommended as therapy. It was found that when a patient was so "desensitized" the headaches no longer spontaneously occurred. Repeated injections however at longer intervals for weeks, months, years, or lifetime, were recommended to avert relapse.

The use of antihistaminic drugs to relieve histaminic cephalgia has received comparatively scant attention. McElin and Horton[2] in 1945 felt that Benadryl was of limited value. In a recent article Horton[3] does not mention antihistamines for histaminic cephalgia; nor does Wolff[4] in his monograph on headache; on the other hand, Goodman and Coonrad[5] in 1947 found that in 3 patients subject to histaminic cephalgia, the syndrome could not be produced by the injection of histamine if Benadryl were given an hour beforehand. Moench[6] attributes prompt relief to Benadryl and Pyribenzamine. Among a number of textbooks of medicine and reference works, one[7] mentions the antihistamines favorably; some[8,9,10] unfavorably; most[11,12,13,14,15] do not discuss them at all in the treatment of histaminic headache. Many do not even mention the syndrome.

Method

The diagnosis in the present series was made on the basis of the characteristic history. In only the first case was an attempt made to evoke a headache with histamine. The resulting agony was so intense that the author lost his enthusiam for producing the headache in subsequent patients. A complete physical examination and routine laboratory studies including blood count, urinalysis, sedimentation rate, serological test for syphilis, and fluoroscopy of the chest completed the initial study of each patient. In several, skull, sinus and dental roentogenograms were obtained.

Antihistaminic drugs were then prescribed in an amount usually double the ordinary therapeutic dose, and their administration was scheduled so that the patient would be under their effect at the time the headache was expected. For example, if headache usually occurred shortly after bedtime at 9 PM, Benadryl (diphenhydramine hydrochloride) in a dose of 100 milligrams was given at 8 PM; and, in order to maintain the antihistaminic effect through the night, enteric coated Benadryl, 100 milligrams, was given at the same time. If the headaches tended to escape from control during other hours, sometimes the drug was administered on an around-the-clock basis or on p.r.n. basis to be taken when the headache occurred. It was never given on a routine three-times-a-day-after-meals schedule, as it was felt that such administration would fail to cover those nocturnal hours when the headaches were most apt to occur. Benadryl (diphenhydramine hydrochloride) and Pyribenzamine (triplennamine hydrochloride) were the drugs usually employed, though an occasional patient was treated with Thephorin (2-methyl-9-phenyl tetra hydro-1-pyridindene), Neoantergan (pyrilamine maleate) or Chlortrimeton (chlorprophenpyridamine maleate).

Results

A striking and welcome complete relief from headache occurred after the first dose in most patients. In others, relief occurred after the dosage was adjusted to cover different hours. In some, relief was not obtained even when the dose was increased to somewhat toxic levels.

In a few, after the initial course of antihistaminic therapy, treatment was discontinued and no relapse has occurred to date. In many, relapses have occurred, each relieved by resuming antihistaminic therapy. The results are summarized in Table 2. At least twelve out of the twenty cases may be considered successful in that the headaches were prevented or alleviated by antihistaminic treatment.

Toxicity was not serious. In one case where Pyribenzamine was used in excessive doses (up to 900 milligrams in 24 hours), the patient became confused and disoriented but recovered on discontinuing the medication. Another patient noted transient nausea and "jitteriness" on 100 milligram doses of Pyribenzamine.

Discussion

It is obvious from Table 2 that antihistaminic therapy will not always prevent or relieve the pain of histaminic cephalgia. In twelve of twenty patients, however, therapy was successful; in 2 other cases improvement was moderate or transient. The immediate advantage of antihistamine therapy is that, if effective, it is effective at once instead of in 10 to 20 days. Furthermore it is oral, economical, required no maintenance dosage and may be used in recurrences. According to Horton the desensitization technique relieves 95 per cent when first used but in relapses is somewhat less successful. Those patients relieved by the antihistamine drugs in this series usually found relief with antihistamines in relapses.

The following points should be emphasized: First, the dosage should be timed so that the effect of the drugs is exhibited at the time the headaches are expected. Second, dosage should be substantial, later reduced perhaps if successful results are obtained. Third, since the antihistaminic remedies are simple and prompt they should be tried first in histaminic cephalgia; but since they are ineffective in a minority of cases, those patients not relieved should then be offered histamine desensitization.

Summary

The antihistamine drugs were effective agents in relieving the pain of histaminic cephalgia in 12 out of 20 patients.

The drugs were administered in large doses and the dosage was scheduled so as to anticipate the expected time of the attacks of pain.

Table 2.

Results of Treatment of Twenty Cases of Histaminic Cephalgia With Antihistaminic Drugs

Name	Age	Sex	Duration	Previous Treatment	Present Treatment	Results in First Night	Results in First Month	Results, late Recurrences	Duration of Follow-up
E. G.	42	M	3 months	None	Benadryl Pyribenzamine	Relief	Relief	Relief	7 years
G.P.A.	40	M	Few days	None	Thephorin	Relief	Relief	Relief	6 years
S. A.	31	M	3 years	Histamine	Pyribenzamine Chlorotrimeton	Failure	Failure	Failure	6 years
J. C.	50	M	20 years	None	Benadryl	Relief	Relief	Relief	7 years
W. C.	55	M	Few days	None	Pyribenzamine	Relief	Relief	Relief	3½ years
L.M.C.	NA	M	NA	Histamine Testosterone Hapamine Antihistaminic daytime	Pyribenzamine	Relief	NA	NA	0
Z.J.E.	47	M	4 years	Cafergone	Pyribenzamine	Relief	Improved	No Recurrence	5 years
L.A.F.	63	M	3 weeks	None	Pyribenzamine Chlorotrimeton	Improved?	Failure	Failure	2 years
C. G.	41	M	20 years	Gynergen Rx of teeth, eyes, sinuses, etc.	Pyribenzamine Chlorotrimeton Benadryl	Failure	Failure	No Recurrence*	18 months
R. H.	36	M	12 years	Histamine	Pyribenzamine	Relief	Relief	No Recurrence	20 months
A. J.	46	M	11 years	Histamine Hapamine Gynergen	Neoantergan	Doubtful	Failure	Recurrence	7 years
T.E.M.	37	M	9 years	Gynergen	Benadryl	Relief	Relief	Relief	7 years
R.F.W.	43	M	12 years	Cafergot Demerol	Benadryl Chlorotrimeton	Relief	Relief	Relief	1 year
E.N.M.	60	F	5 years	Neosynephrin Aspirin	Pyribenzamine	Relief	Relief	Relief	3 years
E.H.V.	47	M	2 years	Histamine	Benadryl	Relief	Relief	Relief	
G.I.M.	40	M	5 years	None	Pyribenzamine	Relief	Relief	No Recurrences	6 years
B. O.	60	M	2 years	Histamine	Pyribenzamine	Relief	Relief	No Recurrences	18 months
J. P.	32	F	5 years	Various	Chlorotrimeton Pyribenzamine	Failure	Relief	NA	0
R.C.M.	43	M	8 years	DHE45 Histamine	Chlorotrimeton Pyribenzamine	Relief	Usual Relief	Failure	13 months
S. C.	39	M	5 years	Histamine Histapon, etc.	Pyribenzamine	Failure	NA	NA	0
TOTAL RELIEVED						14 out of 20	13 out of 17	12 out of 17	

*Listed as a failure though his headaches stopped before histamine desensitization was started.
NA—Not available.

Antihistamines in appropriate dosage and time schedules are recommended as first treatment in histaminic cephalgia with the desensitization technique of Horton reserved for treatment failures.

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HYPOTENSIVE AGENTS

Prolongation Of Action of Hypotensive Drugs

Smirk, F. H., Lancet 2:695, 1952

The hypotensive action of hexamethonium bromide administered subcutaneously can be prolonged by giving the agent in 25 per cent dextran of molecular weight 20,000 or in 25 per cent polyvinylpyrrolidone (PVP). Further prolongation can be obtained by addition of 1:2000 ephedrine hydrochloride solution to the dextran or PVP—hexamethonium solution.

Clinical Clippings, January, 1953.

Cataract Surgery

By Kenneth L. Roper, M. D., M. Sc. (Med.), Associate Professor of Ophthalmology,
Northwestern University Medical School, Chicago

We study the cataract operation to improve our results. Developments and improvements in anesthesia and asepsis have made for better results and have proven to be the most important links in the chain of events leading to the successful closure of the cataract wound with sutures.

If we look for the explanation of the fact that some surgeons have better results than others, we shall find it in a multitude of details rather than in some special procedure. I will make no attempt to review all of the details involved in the various steps of the cataract operation, but will choose some of the situations that I feel need attention.

Preliminary or "Basal" Anesthesia

I particularly want to stress the wisdom of careful preliminary or "basal" anesthesia. Poor results in cataract surgery are too often attributed to poor cooperation on the part of the patient. I am not convinced of this. Every patient about to undergo cataract surgery is disturbed and apprehensive — which serves to emphasize the importance of careful psychological preparation. A few carefully chosen words can be as potent as any sedation. Death can be caused by over sedation. Vocal is as good as local and better than general.

Without careful pre-anesthetic preparation, good anesthesia and akinesia is rarely obtained regardless of the anesthetic agent used.

Eye surgeons use a surprising variety of drugs in the preparation of their patients for operation, for anesthesia, and for the prevention of nausea and vomiting, yet the procedures used in operations are more uniform.

Atkinson[1] polled a large cross section of ophthalmologists in the United States and found of the 30 different drugs reported as being used pre-operatively to produce sedation and analgesia, by far the most popular were Nembutal and Demerol. Seconal was next in favor. Chloral hydrate was the only other sedative used by any appreciable number.

Two hours before the operation I give 30 grains of chloral hydrate by rectum (low retention enema — not suppositories). I particularly call your attention to the use of this old safe and reliable sedative and hypnotic agent. Chloral hydrate rarely causes excitement or delirium, and it is an excellent alternate for the barbiturates, particularly for elderly patients. A half hour later (1½ hours before the operation) I give three grains of sodium amytal by mouth accompanied with a cup of hot tea and toast.

To help produce the sedative effect desired, the patient should be kept quiet with no visitors or activity in the room. Impress upon the nursing staff the fact that the cataract operation actually starts with the preliminary medications while the patient is still in his room.

For those who use Nembutal and Seconal it is well to remember that they are short-acting barbiturates having maximum effect in 90 minutes. They should be given 1½ hours before the operation — timed so the beginning of the maximum effect coincides with the start of the topical anesthesia.

Demerol has potent analgesic properties but only slight sedative action. It should be given 1½ hours before surgery and since its sedative effect is so slight it is best to accompany it with a barbiturate for ample sedation.

Nausea and Vomiting

Nausea and vomiting are often no surprise when they occur. We have all seen the father fall and have to have more sutures than the baby. That is a reaction to an operation without drugs being administered. Most reactions are not reactions to drugs — they are reactions to procedures. In most instances it is probably functional and due to apprehension and fear. Ocular pain of much severity following an operation must arouse in patients the fear that an organ as delicate as the eye may be ruined and so stimulate nausea. It is better to prevent vomiting than to treat it after it occurs.

I have never found it necessary to adopt the routine use of any drugs pre-operatively for this purpose. I feel that careful pre-anesthetic preparation and good anesthesia with the elimination of post-operative pain are good insurance against nausea and vomiting.

For those who feel the need of some pre-anesthetic drug to prevent nausea and vomiting following surgery under local anesthesia either Dramamine (50 mgm.) or Phenergan HCL (12.5 mgm.) is best. Thorazine must be used cautiously. It potentiates the effects of other drugs and for this reason only 15 to 25 mgm. dose should be used.

Local or Topical Anesthesia

Most intraocular operations on adults can be done safely and painlessly with local anesthesia. Atkinson[1] found that 93.2 per cent of the ophthalmologists he communicated with use local anesthesia and 6.8 per cent prefer to have the patient unconscious.

Random notes prepared for presentation before Special Scientific Session of The Southwestern Academy of Ophthalmology and Otolaryngology held during the 1955 Annual Meeting, Southwestern Medical Association, Phoenix

General anesthesia can be said to "have its place." If you have a psychopath, a child, a truly "uncooperative" patient, a "bouncer" or somebody such as that, you are probably justified in putting them to sleep; but only if you have adequate retrobulbar and topical anesthesia first; also, an endotracheal tube in place. Sodium Pentothal seems to be the agent usually chosen for general anesthesia.

For topical anesthesia I employ 0.5 per cent tetracaine hydrochloride. Many surgeons use a stronger solution of tetracaine. For example, Atkinson[2] advocates one or two per cent tetracaine. I prefer repeated instillations of a weaker solution.

Three new compounds all used in concentrations of 0.5 per cent are worthy of mention. Dorsacaine (Smith-Dorsey)[3], Dyclone (Pitman-Moore)[4], and Ophthaine (Squibb)[5]. Dyclone and Ophthaine can be used in patients sensitive to Dorsacaine, Tetracaine and Procaine.

Many ophthalmologists still prefer four to five per cent cocaine, for which they cannot be particularly criticized. Cocaine dilates the pupil and may influence intraocular pressure. More important it causes desiccation of the corneal epithelium and may devitalize the cornea, which could tend to retard healing. It does produce deeper anesthesia.

Akinesia of the Seventh Nerve

Koller[6] introduced cocaine as a topical anesthesia in 1884 and soon after that Hall[7] reported injecting cocaine to produce a nerve block. Nevertheless it was 30 years later before any block of the facial nerve was suggested.

I employ the simple method described by O'Brien[8] for obtaining akinesia of the seventh nerve. In gentle closure of the lids only the orbicularis is acting; while in forced closure of the lids other muscles come into play. This entire group of muscles, which act in forced lid closure, is supplied by the temporofacial division of the seventh nerve. The injection for akinesis of the temporofacial division of the facial nerve should be made over the anterior half of the condyloid process of the mandible. Injections over the posterior half of the condyloid process fail to produce akinesis.

Procaine (Novocaine) is the most widely used anesthetic for injection — in strength of two or four per cent. Xylocaine has become increasingly popular. Opinion varies as to what strength to use. According to Sadove[9], two per cent has no place around nerve trunks larger than a finger, such as the sciatic. One per cent is quite satisfactory about the eye he feels. If one is careful to place his anesthetic solution in the proper place rather than use a stronger solution of the drug, he will obtain good anesthesia and lessen the incidence of toxic reactions. Don't send a man to do a boy's job.

Epinephrine: The advantages to the addition of epinephrine to the anesthetic solutions are that it retards its absorption, hastens, intensifies and lengthens its action.

Wydase: The addition of 6 to 10 turbidity reducing units per cubic centimeter of anesthetic solution causes a greater diffusion of it which enhances anesthesia and akinesia. The added profound hypotony which occurs gives us added insurance against vitreous loss in particular. Hyaluronidase shortens the anesthesia time which is my excuse for not using it in my facial nerve injections. I advocate its use in retrobulbar injections.

Novocain-Pontocaine-Cobefrin Solution

I would like to call attention to a preparation I have employed for over ten years for my subconjunctival and subcapsular injections in cataract surgery. Novocain-pontocaine-cobefrin solution is used extensively by the dental profession for giving prolonged local anesthesia. I first saw Kirby use it. With our usual concentrations of novocain we get the required depth of anesthesia but we often fail to obtain the necessary duration of anesthesia. That this anesthetic seems to meet these requirements is worthy of mention. From the very beginning of my use of this injection, I was impressed with the fact that all the patients had little ocular pain during the first three to six hours after operation.

Retrobulbar or Cone Injection

I believe that the most commonly used retrobulbar injection is intermediate in depth between the apical injection advocated by Harold Gifford[10] and the anterior retrobulbar injection of O'Brien[8b]. I aim to make my retrobulbar injection in this intermediate area of the muscle cone about one centimeter behind the globe. I employ about 1.5 cc of four per cent procaine to which epinephrine and Wydase have been added. Deep anesthesia, oculomotor paresis, and hypotony result.

Scheie[11] has recently reported a method for maintaining continous retrobulbar anesthesia. The criteria for its use does not seem to apply to cataract surgery.

Subconjunctival-Subcapsular Injections

In the past subconjunctival injections of drugs to induce anesthesia of the anterior segment have been made near the limbus. However, Swan and his associates[12] have shown that forward subepithelial injections are less effective than anterior subcapsular injections in inducing the penetration of drugs into the iris and anterior segment.

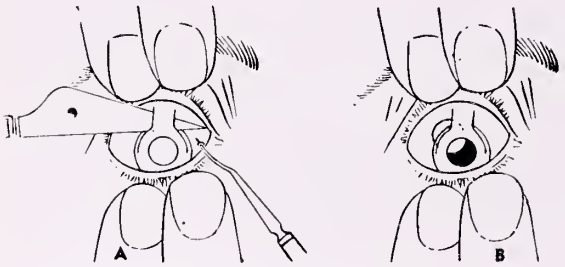
After listening to Swan's recent paper on the subject and viewing his slides I realize that what I have referred to in my cataract work as a "subconjunctival

injection" has actually been a subcapsular injection. I pass the needle through the bulbar conjunctiva and Tenon's capsule in the inferior temporal quadrant near the fornix. The anesthetic solution is injected posteriorly between the capsule and the sclera to block the ciliary nerves. The injection is also made in the superior temporal quadrant near the fornix where it can also be passed posteriorly to block the superior rectus.

Suturing in Cataract Surgery

When one ponders the fact that the surgical treatment of cataract dates back some 3000 years or more, it is hard to believe that it was not until 1865 — 90 years ago — that any suture was employed in the closure of a cataract incision. Because of a continued desire for greater security in the cataract operation, many modifications of the earlier operations were proposed.

The earliest known modification for the purpose of greater security was that of Desmarres[13] in 1858 (Fig. 1). While he employed no suture, he attempted to improve the closure of the cataract incision by utilizing conjunctival tissue in the form of an unseparated bridge beneath which the cataract was extracted. It is doubtful that a conjunctival bridge or any of its modifications are employed to any extent today, but it is interesting to note that it has had its advocates until very recent years.



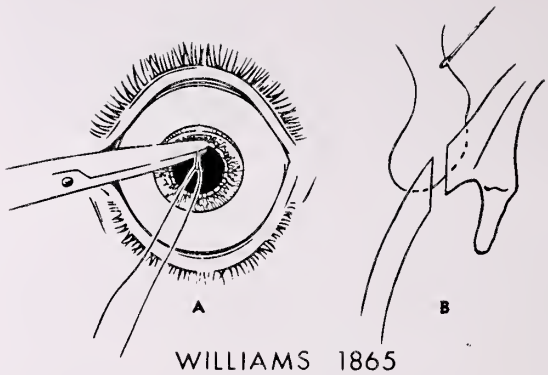
DESMARRES 1858

FIGURE 1

A. Cataract incision with Beer's knife (kératotomie supérieure) and conjunctival bridge upward. B. Cataract delivered beneath the conjunctival bridge.

The second important attempt at greater security in the cataract extraction was the corneal suture of Williams[14] in 1865 (Fig. 2). By 1869 Williams[15] had abandoned his corneal suture in favor of a conjunctival suture placed in an extension of his corneal flap at its apex (Fig. 3).

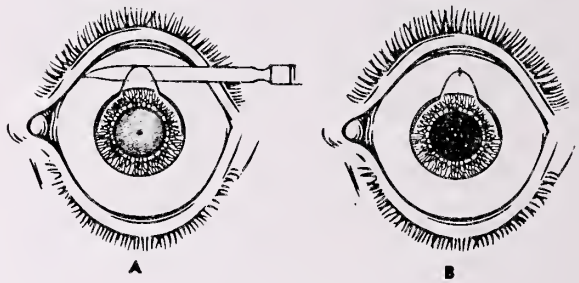
In 1888 Mendoza[16] introduced the first preplaced suture technic. His prepared groove was entirely in the cornea (Fig. 4).



WILLIAMS 1865

FIGURE 2

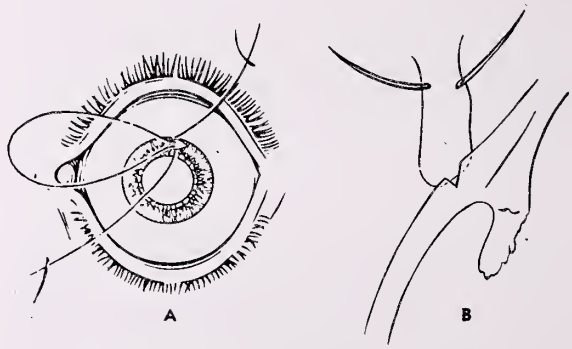
A. Passage of the suture through the apex of lower corneal flap. B. Schematic cross section of passage of suture, which is deep but does not enter the anterior chamber. Note the straight needle 1/4 inch long which was fashioned from the head of the finest sewing needle.



WILLIAMS 1869

FIGURE 3

A. Corneal section extended at its apex a little way into the conjunctiva. B. Single suture placed in the conjunctival appendage after the extraction.



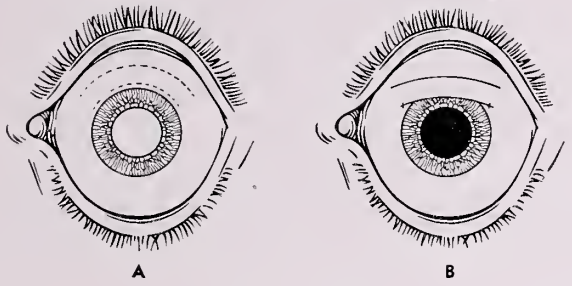
SUAREZ de MENDOZA 1888

FIGURE 4

A. Needles of a double-armed suture passed through each lip of a prepared groove in the cornea. B. Schematic drawing showing prepared groove in cornea and course of preplaced suture.

Sliding Conjunctival Flaps

Sliding conjunctival flaps were a great deal more popular and also more effective than simple conjunctival sutures. Kuhut's[17] bridge operation despite early acceptance, did not meet with continued favor (Fig. 5).

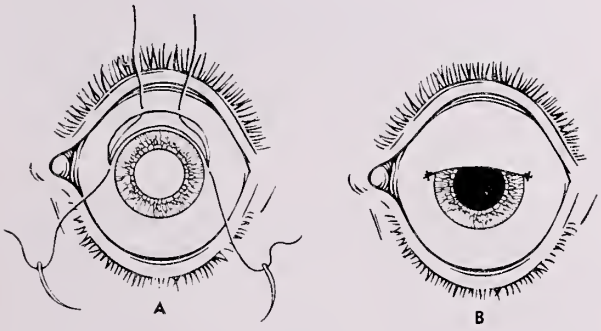


KUHNT 1905

FIGURE 5

Double pedunculated conjunctival flap. A. The dotted lines indicate the two curved incisions of the conjunctiva a short distance from and parallel with the limbus. B. The flap drawn down over the wound and sutured near the attached ends to the conjunctiva of the eyeball.

In 1911 Van Lint[18] introduced his sliding conjunctival flap. It is a simple procedure and has many advantages over other types of conjunctival flaps (Fig. 6). The late Sanford R. Gifford[19] employed this type of flap and many of his followers in the Northwestern group still do.

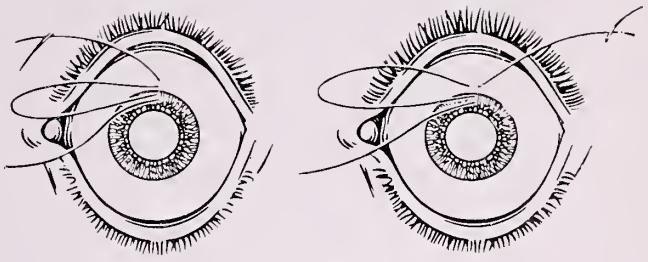


VAN LINT 1911

FIGURE 6

A. Conjunctiva undermined and sutures inserted. B. Sutures tied with incision covered.

In 1894 Kalt[20] described the first corneoscleral suture (Fig. 7). Since it was a preplaced suture, its principal advantage was the same as that which Mendoza[16] claimed for his suture proposed five years previously. By 1910 Kalt[21] had modified his procedure in that his suture consisted of a vertical corneal portion and a transverse episcleral portion.

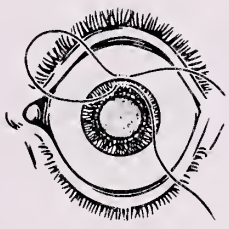


1894 KALT 1910

FIGURE 7

Kalt originally inserted both the corneal and scleral portions of his suture vertically. Later he passed the episcleral portion horizontally.

Historical "untruths" are hard to destroy, but the evidence suggests that two American ophthalmologists (Ziegler[22] and Stevenson[23]) anteceded both Liegard[24] and Stallard[25], usually credited with the modification of the Kalt suture wherein both corneal and episcleral bites run horizontally (Fig. 8).



S. L. ZIEGLER 1890
Philadelphia

MARK D. STEVENSON 1912
Akron, Ohio

H. LIEGARD 1913
France

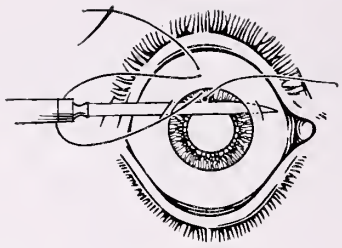
H. B. STALLARD 1938
England

FIGURE 8

Two American ophthalmologists anteceded both Liegard and Stallard, usually credited with the modification of the Kalt suture wherein both corneal and episcleral bites run horizontally.

The security afforded by placing a stop-knot in one end of a corneoscleral suture appeals to many. Frish[26] reported this modification of Kalt's original suture in 1922 (Fig. 9). Gomez-Marquez[27] as well as Mullen[28], O'Brien[29], Lee[30], and Stallard[31] were all much later in writing of their stop-knot modifications of the original Kalt suture (Fig. 10).

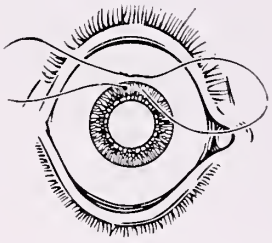
Interest in corneoscleral suturing was greatly stimulated by McLean's[32] description of his suture in 1940. He originally used a single preplaced corneoscleral suture, but he now employs two in ordinary cases, three in difficult ones[33].



FRISCH 1922
GOMEZ - MARQUEZ 1932

FIGURE 9

A modification of Kalt's original suture wherein both the corneal and episcleral bites were vertical but with a stop-knot added to corneal end of suture. Gomez-Marquez added interrupted conjunctival sutures at the finish.



MULLEN 1944
O'BRIEN 1947
LEE 1947
STALLARD 1950

FIGURE 10

A still further modification of Kalt's suture wherein both the corneal and episcleral bites are placed horizontally. The safety feature of a stop-knot at the temporal extremity of the corneal portion of the suture as first suggested by Frisch is included.

Postplaced Sutures

Many experienced surgeons insert their sutures after the section is completed. The increased sharpness and delicacy of the atraumatic corneal needles available today greatly facilitates their introduction after the section is made. However, judging from my own experience and observation, sutures introduced at this stage are much less accurately placed. Postplaced sutures offer a serious mental hazard to the surgeon.

Czermak[34] in 1888 was the first to use a postplaced suture but he later abandoned the method. Kirby was probably the greatest exponent of postplaced radial appositional corneoscleral sutures. Some surgeons use a combination of preplaced and postplaced sutures, and thus feel that they combine the advantages and obviate the disadvantages of either method.

Perera[35] in 1948 described a seemingly safe method of inserting postplaced appositional corneoscleral sutures close to the extremity of a keratome incision with or without a conjunctival flap. Kirby[36] referred to it as a method whereby the only real objection was removed to the placing of sutures after the section was made.

Single or Multiple Sutures

The argument "single or multiple sutures" still goes on unabated. If one studies the more modern concepts of wound healing he gains a better appreciation of the first or lag period when the lips of the wound should be kept in firm close apposition by sutures to insure normal healing by first intention. We should therefore be interested in the immediate strength of our sutured wound.

Increasing the number of interrupted sutures used produces greater wound strength. Each suture adds strength to the suture line, but this capacity becomes greater only when the load is distributed.

Two closely inserted double-armed sutures, or one single suture in the 12:00 o'clock position, can hardly be expected to give the strength of closure of two single interrupted sutures at the 10:00 and 2:00 o'clock positions. Nor could the latter be expected to give the strength of closure of three single interrupted sutures at the 10:30, 12:00 and 1:30 o'clock positions.

The Importance of the Conjunctival Flap

Modern cataract wound closure involves more than sutures — important is the conjunctival flap. It has not only mechanical and surgical significance but plays a histologic role of extreme importance.

Investigators since the beginning of this century and more recently Dunnington and Regan[37] have demonstrated most conclusively how the important initial closure of a wound covered with a conjunctival flap takes place through the formation of a fibrovascular plug of episcleral tissue and how such wounds heal more promptly and more securely than do corneal incisions.

Most clinical investigators[38] also conclude that the best preventive measure against epithelial invasion of the anterior chamber following cataract extraction is the use of some type of preformed conjunctival flap which will cover the entire section. This is an important thing for the surgeon to remember who is frequently confronted with a flat chamber since epithelial downgrowth is most apt to occur in the presence of a persistent flat chamber.

Author's Technic of Suturing

I refer to my own suture technic as one of multiple preplaced appositional, nonperforating, corneoscleral sutures combined with a conjunctival flap. I employ three main sutures. Short preliminary grooves are made at the 10:30, 1:30 and 12:00 o'clock positions about 0.5 to 1 mm. behind the limbus. For this purpose I employ the Lancaster guarded scleral knife.

The guarded blade is set and the incision is made obliquely and at about the plane of a keratome incision. With the Lancaster guarded scleral knife the unwelcome complication of inadvertently penetrating the anterior chamber is eliminated.

The sutures are placed in solid corneal and scleral tissue and not in loose yielding conjunctiva or in insecure episcleral or limbal tissue. To eliminate the hazards of manipulating the opened eye the sutures are placed before the section is made. They are so placed that they pass through and not over the lips of the wound. When so placed and tied they bring the tissues back to their exact preoperative position. The entire wound is also covered by a conjunctival flap, which affords added protection and better surgical closure (Figs. 11, 12, 13).

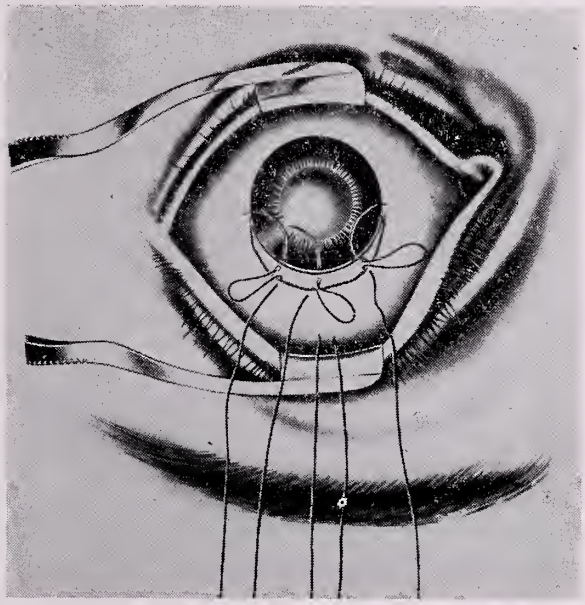


FIGURE 11

Technic of placing corneoscleral sutures.

Keratome and Scissors Section

Specially designed right-sided (R) and left-sided (L) angular scissors used in enlarging the section have been made for me (Fig. 14). They have proved extremely helpful for enlarging the corneal section, particularly by the technic illustrated in Fig. 15, after entering the anterior chamber with a small angular keratome between any two of the sutures.

Scissors commonly employed for this purpose are too light. Strong scissors are better for cutting through the sclera, especially when it is desired to cut it on the same plane as that followed by a keratome incision. The buckling of scissors that are not heavy enough results in a ragged section and in serious bruising of wound lips. No finger pressure should have to be made upon a pair of scissors to keep the jaws from spreading.

My scissors are used as a pair. The blade which is introduced into the anterior chamber on both the right-sided and left-sided scissors is the lower and longer blade, permitting a continuation of the section at the same level or plane on both sides of the keratome incision and without having to reinsert the scissors into the chamber with each snip.

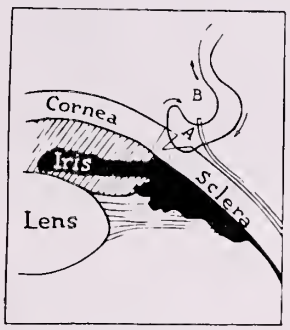


Figure 12

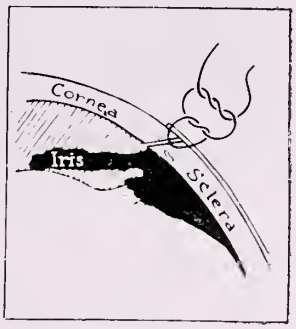


Figure 13

FIGURE 12

Schematic drawing. A. Preliminary groove by Lancaster guarded scleral knife. B. Course of needle and thread passing first through the edge of the conjunctival flap above and then through both scleral and corneal lips of groove. At completion of operation each suture is passed back through edge of conjunctival flap above. It should be noted that the conjunctival flap, and therefore the course of the sutures, differs from that described by McLean.

FIGURE 13

Schematic drawing showing closure obtainable after extraction of lens; lips of wound are back in their exact preoperative position and covered by conjunctiva.

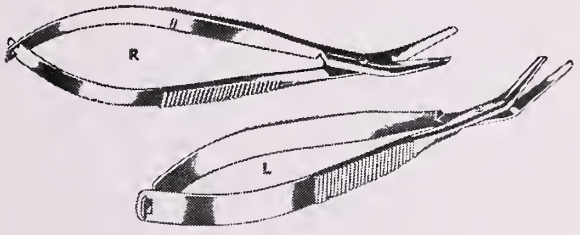


FIGURE 14

Specially designed right (R) and left (L) angular scissors for enlarging corneal section. Blades are angulated, 14 and 16 mm. long, with smoothly rounded points like a spatula, enabling their easy introduction into the anterior chamber without injury to corneal endothelium or iris.

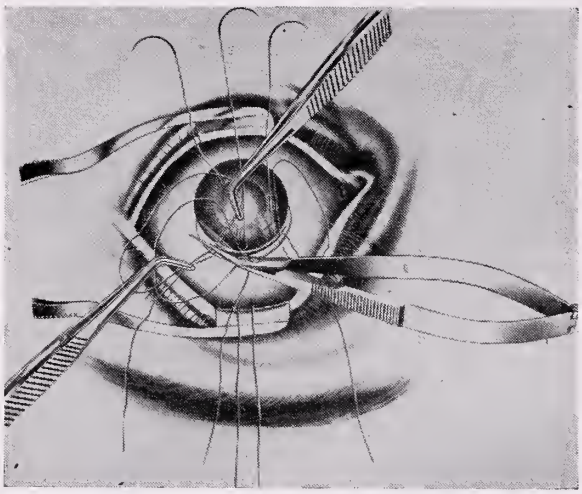


FIGURE 15

Completing section with scissors, opposing loops of sutures being held apart.

Summary

Certain facts and conclusions can be drawn from the foregoing random remarks.

The major factor in the causation of poor wound healing is a lack of firm coaptation of the wound. Firm coaptation of the wound depends on:

1. Accurately placed and firm corneoscleral sutures combined with a conjunctival flap.

2. Removal of extraneous material from the lips of the wound — meticulous toilet.

I will go so far as to say that nowadays the ophthalmic surgeon is almost guilty of malpractice if he does not employ some type of corneoscleral suture.

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Athletic Injuries to the Knee Joint

By Rex J. Howard, M. D., Fort Worth

This paper has as its purpose to stimulate the interest of orthopedic surgeons in treatment of athletic injuries to the knee joint; especially to better the relationships between our profession and the coaches. We feel that there is sufficient evidence to prove that adequately treated injuries to the knee joint in athletes, especially in college, and most especially in football, heal quicker and cause less disability when treated adequately so that ruptured menisci or torn ligaments and chipped articular cartilages are repaired.

For this reason, we feel it is important that it be explained to the coaches that knee injuries be properly diagnosed; and those in which there is a mechanical disturbance of sufficient degree that it will further destroy the knee joint to participate in athletics, that the condition be corrected.

Twisting Injuries

The majority of these athletic injuries, in college especially, are football players; the primary reason being, that the foot is fixed to the ground with a long cleat. The patient is hit from the front, or from the side, or a combination of both, and his trunk is spun and there is a twisting injury with a direct force on the knee joint.

In our experience, we have found that quadriceps exercises are useful for the early treatment of injuries to the knee joint. They are useful to determine if the patient's quadriceps function is sufficient to return to athletic endeavor, and by the use of this test, the patients are not returned to athletics with a weakened knee joint, and severely injured before they are allowed to become well. We also use quadriceps exercises for diagnosis of injuries to the knee, as well as post injury and post-operative follow-up.

Various Traumas

The effections of the knee joint are torn menisci, medial primarily; but considerable numbers of silent lateral tears are also present; and it is not unusual to find both medial and lateral meniscus torn in this type of patient. The most severe injuries, of course, cause tears of the medial collateral ligament and the cruciates.

The symptoms that these patients present, of course, are swelling, locking, weak quadriceps, vague pains, feeling of something wrong and clicking in the knee joint.

A diagnostic test that we have found especially useful, we attribute to Dr. Edwin F. Cave in Boston, and that is, with the patient sitting, and palpating behind the medial collateral ligament on the upper edge of the tibial plateau. Swelling can be felt in this area when there is a tear of the meniscus, due to the swelling of the capsule in this area.

X-ray Recommendations

In x-raying these knees, we recommend AP and lateral, tangenital view and notch view of all the knees, because we have, a number of times, made diagnoses especially in traumatic exostosis of the patella, with the tangenital view, and also, loose bodies can easily be seen with the notch view.

We do not hesitate, when we find that patients have torn meniscus, to remove the medial one, and a search for the lateral one, and if we find the lateral portion of the patella, or the lateral femoral condyle to be roughened, we suspect the lateral meniscus to be torn. We do not hesitate to remove both of them, and have not found this to be disabling.

In our post-operative follow-up, we have used crutches until the patient's quadriceps strength is returned to 50 per cent or normal, and have found that this prevents swelling. We have the patient bear weight, only put the crutches down to prevent excessive motion of the knee in case he slips or turns. Post-operatively, in these patients who have chondromalaciae of the patella, we give them static resistance exercises. Again, we use our quadriceps exercises to determine if the function has returned sufficiently for the patient to be allowed to return to full activity. We feel as DeLorme has stated, that the quadriceps should be strengthened to at least as strong as it was prior to the time of injury as judged by the good leg.

Problem of Incapacity

Again, we would like to say that knee surgery, in itself, is not incapacitating. We feel that the problem of incapacity following athletic injuries is those patients who have not been adequately treated, and consequently, further damage is caused to the knee joint and prevents them from participating in athletics; that is, the function is not restored and further damage is caused. It has been our observation, 100 per cent without fail, that those patients who have any large amount of damage to the condyles, or the tibia, or the femur, or damage to the cartilage of the patella, are not able to regain sufficient strength in their knee to play football, and consequently, have subsequent injuries and become disabled.
the coaches to this fact, and teach them what we have

Again, we reiterate that it is our duty to educate to offer them, to return their patients to duty faster, and prevent severe damage that will bother the athlete later on in life.

In closing, we feel that a working relationship between orthopedic surgeons and coaches can be best bettered by a cooperative program aimed at understanding the problems of the two in combining their efforts to prevent severe athletic injuries, and also prevent pain and traumatic arthritis and disability in later life for these young athletes.

Clinical Note on Estrogen–Progesterone Therapy for Menopausal Complaints

By Joseph B. Raddin, M. D., Phoenix

Most women secure complete or satisfactory relief from menopausal complaints with an oral estrogen. The few women who fail to derive adequate control of one or more symptoms with an oral estrogen deserve, and there are other hormones available which will give them, greater freedom from the subjective aches and pains, 'nervousness', and functional disorders.

Currently much in use is a mixture of an estrogen and testosterone, given orally or by injection. These mixtures are useful additions to a physician's therapeutic armamentarium — if used when properly indicated. A relatively small number of women derive little benefit from oral or injectable estrogens or estrogen-testosterone mixtures. Undesired side-effects, such as hirsutism, are common.

Definition of Menopause

It is my interpretation of the word menopause that no woman enters her menopause until and unless ovarian function has ceased, and hence also, she has ceased to menstruate. This does not occur naturally until she has reached her late forties or mid-fifties. Women who have menstrual irregularities and menopausal-like symptoms at an earlier age should be diagnosed ovarian hypo-function.

The same is true of women who have undergone hysterectomy before the natural menopause. Ovarian hypo-function is usually secondary to anterior pituitary hypo-function — that is, inability of the gland to secrete adequate amounts of FSH (follicle stimulating hormone) and LH (luteinizing hormone). Hypothyroidism secondary to insufficient TSH (thyroid stimulating hormone) is frequently concomitant. Women suffering "early menopausal" complaints are often improperly diagnosed as "starting an early menopause." Women before fifty years of age regularly, in my experience, respond well to adequate anterior pituitary stimulating therapy. Naturally, there comes an age at which the ovaries are no longer able to respond to stimulation by the anterior pituitary hormones. Then the menopause has arrived, and amenorrhoea is permanent.

Why Do Estrogens Alone or in Combination With Testosterone Sometimes Fail To Give Relief To A Few Women?

With failure of ovulation at the menopause, there is a marked decrease in ovarian secretion of estradiol and progestin. This stimulates anterior pituitary secretion of large amounts of FSH and LH. This hormone imbalance is suspected by many endocrinologists to be the cause of menopausal complaints — not alone a deficiency of estradiol. Testosterone therapy is valuable, in small amounts, when osteoporosis is present.

Since testosterone has an effect antagonistic to estradiol, careful adjustment of the proportionate dosage of the estrogen to testosterone, and of the dose of the mixture, to the needs of each individual woman, is important. Estrogen alone or estrogen-testosterone mixtures, however, do not suppress LH secretion by the anterior pituitary.

Ideal Therapy

Ideal therapy, in my experience, for menopausal complaints is a mixture of both ovarian hormones — estradiol and progestin. Then both FSH and LH secretion by the anterior pituitary is inhibited. A useful mixture is 5 mg. Depo-Estradiol (Upjohn) plus 50 mg. Progesterone in oil. This dose, administered every four to six weeks, is remarkably effective for those women whose menopausal complaints have resisted other medication. It is more physiologic therapy and at a smaller dosage than an estrogen alone. Oral administration of adequate amounts of progesterone is expensive. It is more economical to give an occasional injection.

Suggestion

It is suggested that estradiol-progesterone therapy be tried in those few women who have not derived benefit from other forms of medication for menopausal complaints.

Abstract

USE OF METHALLENESTRIL (VALLESTRIL) IN CONTROL OF MENOPAUSAL SYMPTOMS

Goldfarb, A. F., and Napp, E. E.:
J. A. M. A. 161:616 (June 16) 1956

Menopausal symptoms in 100 patients between the ages of 35 and 62 years were treated with six mg. daily of methallenestril (Vallestril), a synthetic estrogen; a contra-test group of 20 patients received a placebo.

Good or fair results were obtained in 91 per cent of the test group in contrast to 15 per cent in the control patients.

The dosage schedule ran for 30 days, at which time medication was interrupted for two weeks and the need for a second course determined by the return or absence of symptoms. No patient was given more than three such courses in any four-month period.

Vaginal smears taken from certain patients objectively corroborated the subjective findings. An estrogenic response was evident after 10 to 14 days of medication and persisted for 16 to 30 days after cessation of therapy.

The dosage used did not cause withdrawal bleeding or any other untoward effects but generally gave a feeling of well-being. As is usual with all estrogens, the warning against unnecessarily prolonged medication is offered.

Odds and Ends in Occupational Medicine

By Jerome W. Shilling, M. D., Los Angeles

PART I

In another discussion we will cover some of the basic elements and broad principles of Occupational Medicine. Particular emphasis being directed toward the current trend, and objectives, with further emphasis on the salient and indispensable role played by the physician in private practice.

This discussion will keep closer in mind the physician who sees more than an occasional industrial case; the "on call" physician; those whose assignments include part time in-plant medical service, and those whose future will lead to a full time Occupational Medicine endeavor.

Johnstone, R. T.[1] states: "Obviously the future will include an ever expanding program of preventive medicine, encompassing the control or elimination of tuberculosis, cancer, heart disease, venereal disease, and other scourges; the future will continue to improve preventive measures against industrial injury or occupational illness; it will expand research in the field of industrial toxicology, but it will propose to do more, much more."

Future Foreseen

With the advent of more intricate and complex technical devices; more innate ability, training, and skill, is required in their successful operation. This means more selectivity, proper placement, and no effort spared in human maintenance. The breach created by the man not at his post is becoming more and more difficult to fill. Looking into the future it appears quite evident that this fact will continue to mount as time elapses.

Holmblad, E.[2] states: "The relationship of Industrial Medicine to all other specialties has a similarity to the specialty of Pediatrics. The Pediatrician consults with the Surgeon, Cardiologist, Radiologist, Urologist, Ophthalmologist and Neurologist in the care of the child up to 15-16 years of age. The industrial physician then has a similar relationship with all the specialties in the care of injuries and health of the worker during his life span of employment."

Specialties Listed

Although particular industries may require in preponderance respective specialists, in general experience has developed that specialties are required in frequency in about the following order: *1.* Surgeon—(General, traumatic, orthopedic, otolaryngologists, neuro surgeon, plastic and oral.) *2.* Occulists (eye injuries and refraction). *3.* Roentgenologist (particularly chest, spine and skull.) *4.* Dermatologist. *5.* Internists. *6.* Neuro-psychiatrists. *7.* Industrial hygienists and toxicologists. *8.* Physical medicine. Not infrequently, a team of specialists may be required in particular and special cases.

As an example a severe burn case may require the services of a surgeon, internist, ophthalmologist, plastic surgeon, physical medicine, and one or a group particularly equipped and adept in the principles of rehabilitation.

To well carry out the present concept, purpose and goal of Occupational Medicine it is incumbent upon the industrial physician to keep informed, if not abreast of all branches of medicine as medicine marches forward. An industrial physician who examines, diagnoses or treats industrial cases, or advises when an employee contemplates returning to work following absence from illness or injury, is necessarily considering all but the entire gamut of disease entities and injuries as he carries on from day to day.

Furthermore he must be well aware of the job requirements to which the individual is returning including the physical as well as the tension and exposure elements.

Thorough Knowledge

With the foregoing in mind the necessity of a thorough knowledge of work requirements and environment becomes clear. Such information is not realistically obtained by statements from the individual or by telephone conversation with his foreman.

For those of us engaged in this endeavor it is of necessity and is our duty to go into the plant whether there be 50 or 50,000 on the payroll. In this and only this way are we able to gain first hand, complete, and correct knowledge so essential to us in adequately evaluating, diagnosing, treating, and advising, in such a complex field.

In the great majority of instances, such plant visits will be welcomed and encouraged by the employee, employer, and if such is on the staff the plant engineer, the safety supervisor, and industrial hygienist as well.

The advantages, benefits, and necessity of such a routine and program are multiple and become increasingly evident, namely:

1. Initial overall concept of mechanical, and actual, or potential toxic exposures as well as physical and tension elements in conjunction with job requirements.

2. In no other way than by periodic "plant walks" are we able to keep abreast of rather frequent changes in machines and substances used.

3. Greater confidence in you is inspired in both the employer and the employee.

4. And, to repeat again, your position is much better when you see the employee in your office, the plant, the hospital, or in his home.

5. You are more fully recognized as an important functioning member of the whole team by all "players."

6. Finally, you circumvent a possible pitfall of ascribing a given illness or pathological state to occupational origin on the basis of exclusion of other disease entities. Remember occupational disease entities are well established, recognized, and diagnosed on history of actual exposure, laboratory and clinical findings.

It has been said that the greatest difference between the part time practice of industrial medicine by the general practitioner and the full time industrial physician is lack of familiarity with working environment of the employees they are treating.

In Court

In court there is not infrequently a breach in medical opinion incongruent to the point of difficult legal interpretation. In instances medical opinion is required in court and in general these opinions cover three questions:

1. Direct trauma; (liability not denied but degree of injury with its residual is questionable.)

2. Industrial hazard exposures and results; (special and complete knowledge is essential in this field.)

3. Relationship of trauma to communal disease (cardiovascular, degenerative, inflammatory, neoplasm, neurogenic, et al.)

Ever remember you are there to inform the court and not to win the case for the plaintiff or the defendant.

For those who are contemplating expansion of industrial endeavors, are planning, or are now engaged in in-plant medical service, the following are further pertinent considerations:

Economic elements including cost have been mentioned, however, further comments appear in order. During 1952 occupational accidents cost American Industry $45 per worker with 15,000 killed, 200,000 injured, and a 250,000,000 man day loss[3]. "Fringe" benefits amount to 18.7 per cent of the payroll or $644 per employee per year or $1,500,000,000 annually[4]. Measured costs are moneys actually spent and easily measured including medical care of injured, compensation, permanent disability or death awards, continuance of pay while not on job for other reasons, pension accruals, vacation, health insurance and service.

The hidden cost, difficult or impossible to measure is in the idle machine; the destruction of equipment; the training of replacements; the "standby" employee, and overtime; the product or service either not produced or curtailed and/or improperly produced and performed, and adverse effect on those (fellow employees) not directly involved. All this accounts for considerably more than the measured cost.

Twelve to One

Absenteeism related to non-occupational illness, injury, and extraneous interests or commitments compared to absenteeism related to occupational injury and illness is at a ratio of about twelve to one. The employer must consider the aggregate, including final cost and overall economic relation to the most efficient production or service.

As physicians, we must remember that management's concern, and what is at stake is a fundamental, and further that management is not particularly concerned whether Dr. Brown or Dr. Green directs health enterprises or treats injury cases. His primary and final concern is how, where, and with whom the best service for all in his particular organization is obtainable.

In formulating plans for in-plant medical service, I remind you again that the primary interest is in people, and that for the greater part, requirements are of basic nature and are identical in all industries. Other than this a medical department in industry must be molded to fit specific and special requirements of a particular industry, namely size, geography, exposures, (mechanical and toxic) and availability of consultation help.

Minimal Standards

The Occupational Health Institute has established minimal standards for industrial medical services in organizations having from 100 to 25,000 and over[5]. An organization meeting these minimum standards are so recognized, and an appropriate certificate of approval is awarded. A brief incomplete summary of these requirements is as follows:

1. The organization has a stated medical policy to include:

   A. Preplacement medical examinations including indicated laboratory procedures.

   B. Periodic medical examinations on all who are exposed to potential or actual industrial hazards. This to include all tests necessary as indicated by any of such exposures.

2. The professional staff is sufficient to carry out the above stated policy. Members of the medical and nursing staff are competent to perform duties prescribed in the stated policy. They are graduates of accepted schools of learning; are

in good standing, and licensed to practice in their respective states or provinces. In plants of 2,500 to 25,000 there is one full time doctor or equivalent for each 2,500 employees (the ideal is one doctor for each 1000 employees.)

3. Facilities are available for the performance of competent preplacement and voluntary periodic medical inventories. (In plants of 100 to 2,500 these facilities may be located within the confines of the plant proper or in the offices of the consultants or part time physicians whose duty is to carry out the prescribed medical policy. In plants of 2,500 to 25,000 these facilities are to be located within the confines of the plant).

4. A system of an adequate consultation staff is maintained. In plants over 2,500 the job descriptions of all key medical personnel are on record. When particular exposures so warrant industrial hygienists and sanitary engineers are included.

5. Sufficient attention is given to plant environment; i.e., sanitation, safety precautions, and industrial hygiene.

6. The medical director, medical advisor or chief medical officer report to some responsible member in management who is conscious and familiar with managerial interpretation of medical policy, and whose assistance can be relied upon to help maintain the aforementioned standards.

7. In addition to facilities for preplacement and periodic inventories, a well equipped dispensary for emergency care is maintained.

These requirements are so worded that every source and type of medical service available to industry can be utilized and accredited. For example, a small unit of 50 employees which has an established health maintenance program in effect for its employees can be given certification by the institute providing that:

1. Preplacement examinations are performed by a private practicing physician located in the vicinity of the operating unit.

2. Voluntary periodic inventories are made available to each employee, and these examinations are performed by a graduate medical doctor, capable and interested in the performance of such examinations from the standpoint of health maintenance.

3. Periodic health inventories are performed by professional people capable of doing so on all employees who are exposed to potential or actual occupational hazards.

4. First aid measures may be instituted quickly and effectively in the event of catastrophe.

5. All medical facts are confidential between the examining physician and employee.

6. Suitable consultants are available in event of need.

For certification a program of definitive care with the exception of care of industrial and occupational disease cases is not considered. This falls in the province of the employee and his personal physician.

Summary

In summarizing the current status of Occupational Medicine, it is becoming increasingly evident that, in addition to the necessity of effective and complete provision for the treatment of occupational diseases and injuries, there has been, and will continue to be, an augmenting trend toward prevention and human maintenance, taking into full account all related facets and ramifications. Additional elements not discussed in the foregoing include:

1. Health education (approach and methods must vary considerably according to local situations.)

2. Advice on personal problems, domestic and otherwise, with continual attention to extraneous environmental factors.

3. Recognition of alcoholism (problem drinking) as a disease, and that under adequate case finding, proper guidance, care and follow-up, the majority are amenable to cure or control with continued industrial usefulness, particularly when detected in the early stages when deflection is less difficult.

4. Rehabilitation and selective placement, measurement of the individual by abilities rather than handicaps.

5. Increased training facilities at undergraduate and post graduate levels, and within the factory.

6. Recognition that dependence on the individual, rather than the group, has resulted from recent and current industrial technology both mechanical and chemical.

7. An ever increasing liaison and rapport between employee, employer and physician.

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MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

August 16, 1956

FREDERICK P. BORNSTEIN, M. D., EDITOR — CASE NO. 678
PRESENTATION OF CASE BY H. M. GIBSON, M. D.

History — Dr. Nathan Kleban

A 63-year-old Latin American widow was brought to the hospital by ambulance on June 9, 1956. That she had been sick for two years was the entire history that could be obtained.

Physical Examination:

T. (R) 98.8 R. 24 P. 84 B. P. 130/60

The patient was an acutely and chronically ill severely wasted woman in a state of semi-stupor from which she could be aroused. She did not appear to comprehend when spoken to nor the meaning of events around her. Breath sounds were distant, bronchovesicular, with scattered bilateral wheezes and inconstant fine moist basilar rales. Palpation of the entire abdomen, which was soft and flat, was resisted, particularly the right mid-abdomen. Here a firm, irregular mass, approximately 15 cm. in diameter, was palpated. The mass extended into the right flank and the lumbar region, was not attached to the skin or pelvic structures, did not pulsate and did not move with respiration. Normal bowel sounds were heard.

Hospital Course:

Rectal temperature ranged between 97.6 and 100.4 until the day before death when it reached 101.4. She was fed by mouth to some extent. There were incontinent green loose stools. The patient was seen by medical, surgical, and urological staff men. Neither bladder nor ureteral orifice abnormalities were noted during the course of obtaining retrograde pyelograms 10 days after admission. Abdominal pain, generalized, but more severe on the right, continued. Distended abdomen, tinkling bowel sounds, labored respirations, rapid pulse, and shock preceded death 11 days after admission.

Laboratory:

Hemoglobin 12.0 gms.; hematocrit 38; WBC 11,600; stabs. 3, segs. 72, lymphs 22, monos 3. Urinalysis: yellow, alkaline, cloudy. S. G. 1.014, albumin negative, sugar negative, WBC 5-6, RBC 6-8, no casts. Blood sent for serological test for syphilis but report is not on chart.

Chest film:

"There are several bilateral large, scattered, homogeneous circular nodules in the lung fields secondary to metastases, most probably from the G-U tract . . ."

Intravenous pyelogram:

"The inferior calyces on the right appear to have some compression deformity secondary to extrinsic pressure from a soft tissue mass in the right mid-abdomen . . ."

Survey films of abdomen:

" . . . a moderate amount of gas scattered throughout the large and small bowel. There is a large irregularly calcified opacity in the pelvis consistent with calcified fibroids . . . The kidney shadows are poorly visualized. The psoas shadows are somewhat obscured by gas in the bowel."

A report of retrograde pyelograms does not appear on the chart. The house staff progress note quotes the radiologist as seeing "no renal mass."

X-ray Discussion — Dr. Vincent M. Ravel:

Of course as all of you can see, there are in the chest these large, circular nodules that are scattered throughout both lung fields. I do not see any evidence of osseous involvement. The patient is somewhat emaciated, there being very little soft tissue.

The abdomen again reveals a suggestion of soft tissue mass in the right flank, together with this characteristic irregular, granular calcification that is usually seen in calcified fibroids of the uterus.

Intravenous Urogram

The next examination was an intravenous urogram; the left kidney appears normal, concentrates well, and there are no significant defects. However, the right kidney shows a deformity of the inferior calyx, although the kidney concentrates well and receives excellent concentration of the opaque media in the pelvis.

The soft tissue mass seems to extend somewhat laterally, and, interestingly, the visualized superior calyx does not show any evidence of obstruction. In the retrograde pyelogram it seems as if the ureter is displaced somewhat medially. In the lateral view there is an anterior displacement of the ureter. In the normal kidney the ureter would lie along the posterior gutter of the abdomen and here it seems to be displaced anteriorly.

I have been looking very carefully at the transverse processes of the vertebrae trying to identify some erosion or some osseous or osteoblastic process. I can't

identify anything that involves the vertebral column or the iliac crest so I think that the changes we have here are consistent with a carcinoma of the kidney with a metastasis to the lung or a retroperitoneal sarcoma which would be displacing the ureter anteriorly and involving the inferior pole of the kidney.

I don't believe that the calcified fibroids are of much significance, although occasionally you can get a sarcomatous degeneration, again with extension and metastasis.

Differential Diagnosis — Dr. H. M. Gibson:

We have a case that appears to be very obvious — you have a woman 60 some odd years of age with a mass in her abdomen and X-ray findings which are very characteristic of a tumor of the kidney. The one thing that we would like to have here which would make it almost a hundred per cent complete would be hematuria, inasmuch as 90 some odd per cent of parenchymal tumors have hematuria. We don't know whether she had this or not, although from looking at the retrograde pyelogram, I am reasonably certain she must have had hematuria.

The physical examination is very well described and is characteristic of a retroperitoneal mass or a kidney mass. The X-rays reveal a round shadow which appears to be retroperitoneal involving or arising from the lower pole of the right kidney.

Logical Basis

On a logical basis you can come to no other conclusion than the fact that this woman had a carcinoma of the kidney or I should say a malignant process involving the lower pole of the right kidney (this would allow a little more leeway). On a percentage basis, it most likely would be a clear cell type carcinoma of the kidney. Next, it would most likely be a so-called granular cell carcinoma of the kidney. From that point on you get into various aberrations.

You could have a sarcoma of the kidney; it could be a process arising from the retroperitoneal space and secondarily invading the kidney. It is possible that this would be a cyst of the kidney that has undergone malignant degeneration in the form of forming a papillary type of cystadenoma, but my diagnosis on the basis of what we have here is a carcinoma of the kidney involving the lower pole. Now, come slaughter me!

Dr. F. P. Bornstein:

Thank you, Dr. Gibson. I would like to ask you a question, a question which has always interested me. On the assumption that this women had a carcinoma of the kidney, what happened to her?

Dr. H. M. Gibson:

You mean the terminal process?

Dr. F. P. Bornstein:

Yes.

Dr. H. M. Gibson:

The most common way that they kill is by metastatic lesions involving some vital part of the body. It is possible for a lesion of this type to have a hemorrhage into the substance of the tumor or to invade and destroy directly some vital organ such as the vena cava or something of that nature.

Dr. F. P. Bornstein:

Any further discussion? The thing that strikes me about the history is that she had abdominal pain, generalized, specially on the right, and rather high white count; now, how does this go with carcinoma of the kidney, the distended abdomen and so on? Do any of the other surgeons here care to make a suggestion about what is going on in the abdomen before we discuss the autopsy findings?

Dr. Celso Stapp:

In relation to why people die in cases of carcinoma, we see people die with carcinoma who are quite dehydrated, they have been unable to maintain a fluid balance. I had one die this month in whom the hemoglobin never dropped below 14 grams, but I felt that she was getting a terrific amount of blood destruction.

She did have intestinal obstruction along with it. I don't think that you have to have anything more than metastases with the blood destruction that goes along with it. I am sure she was destroying blood pretty fast even without hemorrhage. The white count being up may be due to the hemoconcentration that they undergo with it.

Dr. W. R. Gaddis:

In the few patients that I have seen with adenocarcinoma of the kidney of the clear cell type, anemia was an outstanding finding in nearly every one of them. In one patient which came to me it was the presenting symptom of which the patient complained, and, therefore, I think that it might be misleading at times if we are to assume too much on the basis of this.

I would like to point out that this patient was a very good candidate from the beginning for sudden death episode of any nature because she came in to the hospital stuporous and possibly or probably had metastases within the cranial cavity at the time of admission to the hospital and having metastases there it is not inconceivable that sudden death could obtain from the sudden onset of encroachment upon the vital centers.

In addition, as Dr. Gibson pointed out, if this tumor in the abdomen were to suddenly become necrotic and hemorrhagic, it certainly would not be so inconceivable that she would die of immediate hemorrhage and could expire in the manner that was described in the protocol. However, I think that her death was due to central factors rather than to a matter of

hemorrhagic loss of blood within the cavity or immediate adjacent area to the tumor.

Clinical Diagnosis: — Kidney tumor

Dr. H. M. Gibson's Diagnosis: — Carcinoma of kidney

Pathological Diagnosis: Acute peritonitis due to ruptured sub-hepatic abscess due to erosion of ascending colon by carcinoma of right kidney.

Pathological Discussion: - Dr. F. P. Bornstein:

On autopsy we found an emaciated elderly woman The main findings were in the abdominal cavity. The abdominal cavity contained about 100 cc. of pus. The peritoneum and the intestinal loops showed all the gross findings of an acute peritonitis. On investigating the source of this peritonitis it was very easy to rule out such obvious sources as the appendix or a ruptured peptic ulcer.

We found a large ruptured abscess below the inferior surface of the right lobe of the liver extending downward to the ascending colon. It then could be seen that the posterior wall of the colon had been eroded by a retroperitoneal tumor mass. After further dissection a large tumor was found in the right lower pole of the kidney which on histopathological examination proved to be a clear cell carcinoma.

From the preceding discussion it is quite obvious that carcinoma of the kidney was the first diagnosis considered by everybody concerned. However, the mechanism by which this tumor killed the patient was completely unsuspected during her course in the hospital.

Erosion of anterior structures with secondary peritonitis is evidently one of the rarer complications of carcinoma of the kidney. In retrospect, however, a distended abdomen, rapid pulse, and shock-like death, are compatible with an acute peritonitis.

ANEMIA

The Blood Volume In Various Medical And Surgical Conditions

Berlin, N. I., et al., New England J. M. 247:675, 1952

Hematologic observations by the labeled red-cell technic on 179 normal pregnant women indicate that there is a real anemia present during gestation. There was a significant decrease in total red-cell volume during the first trimester of pregnancy followed by a slow rise until the ninth month. A 300 cc. decrease occurred at delivery, the total red-cell volume remaining below normal* as long as six weeks post partum.

**The total red-cell volume for normal, nonpregnant women is 27.0 cc./Kg. (Hematocrit 42.0%)*

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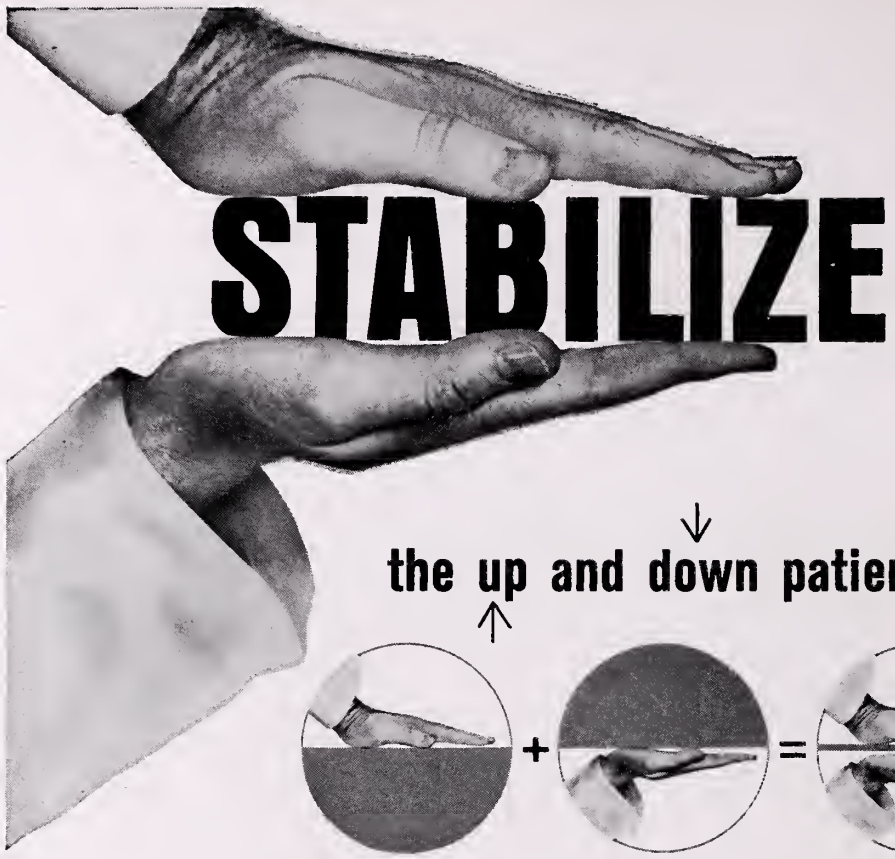
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1. Arnoff, B.: Personal communication. 2. Lazarte, J. A., and Petersen, M.C.: Personal communication.

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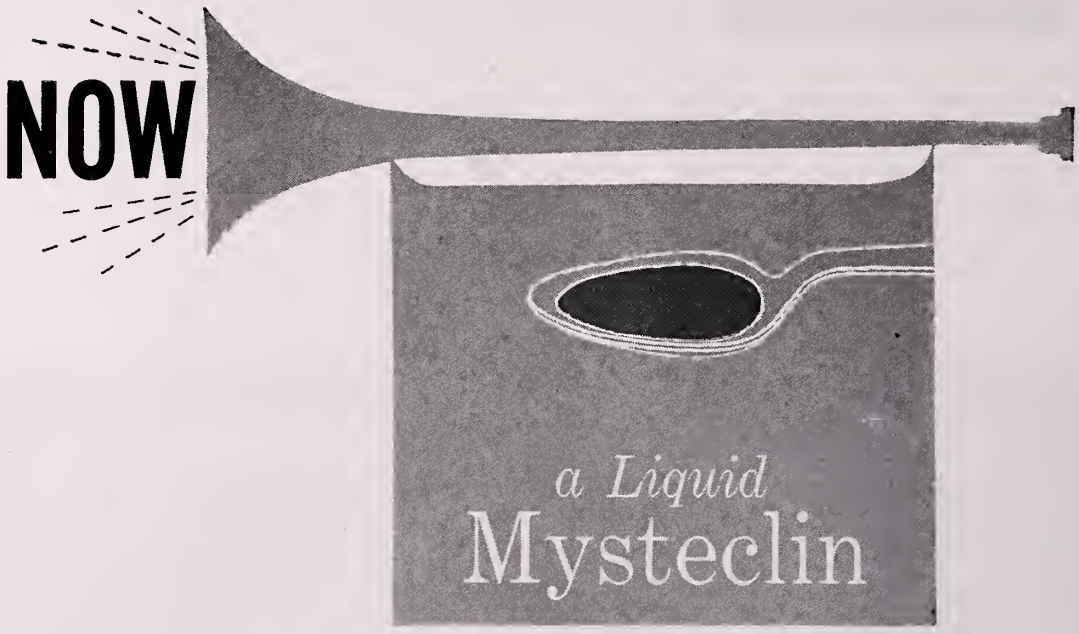
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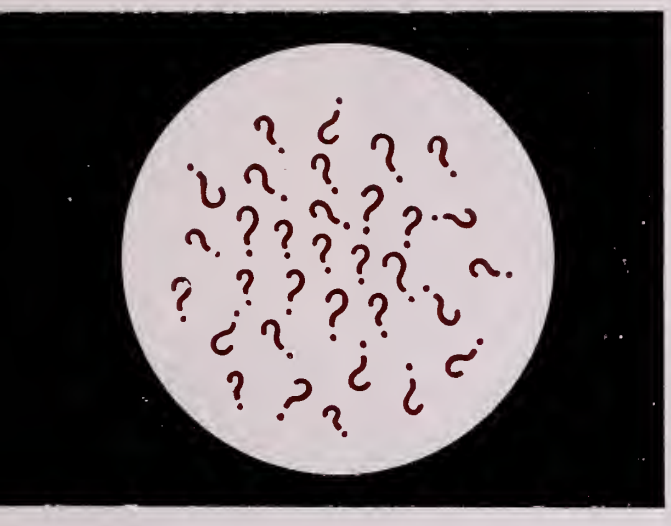
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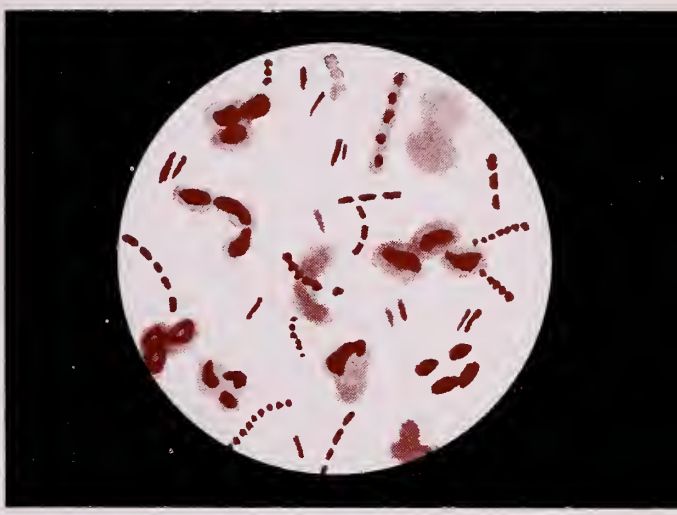
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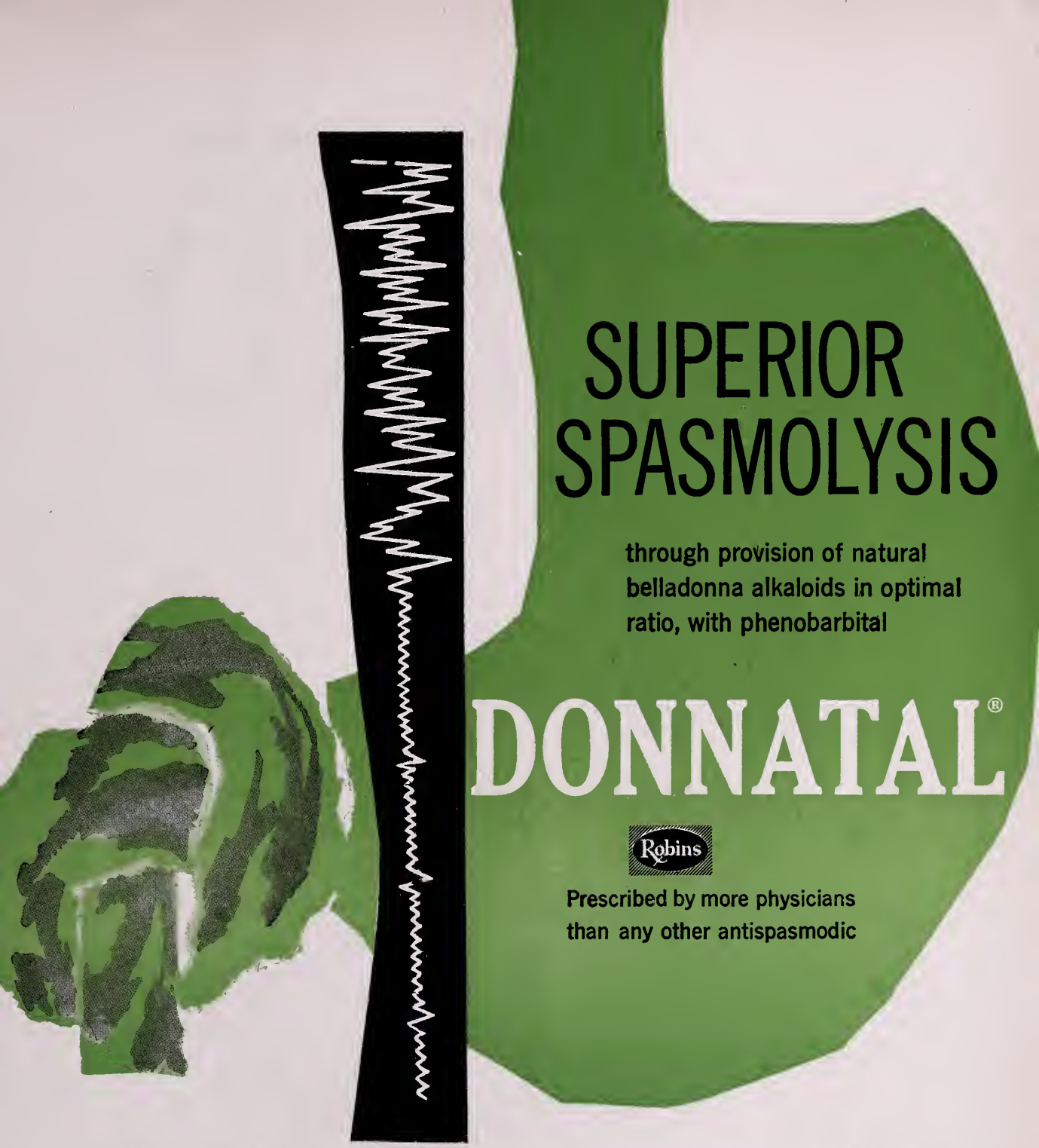
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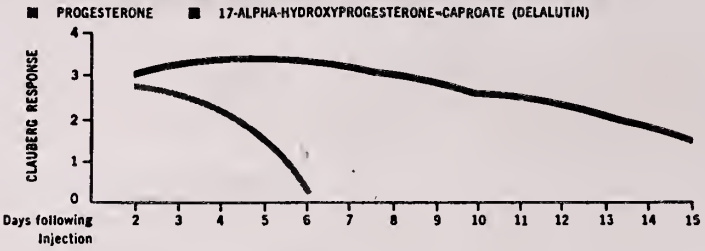
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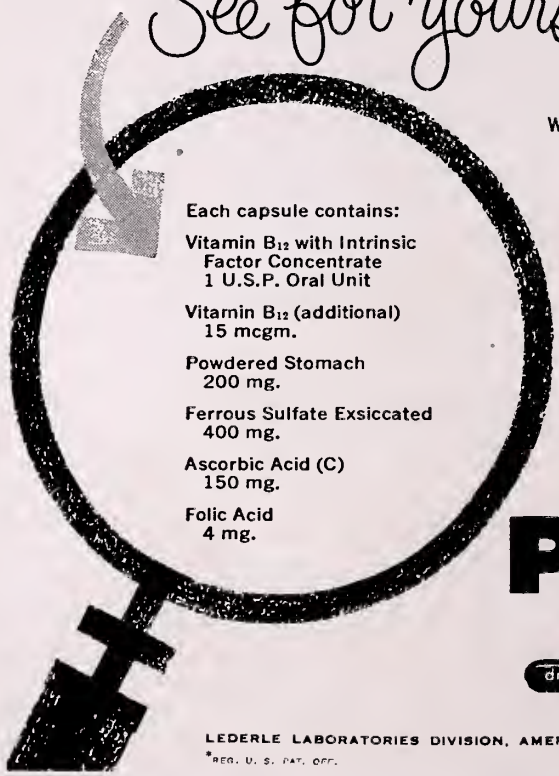
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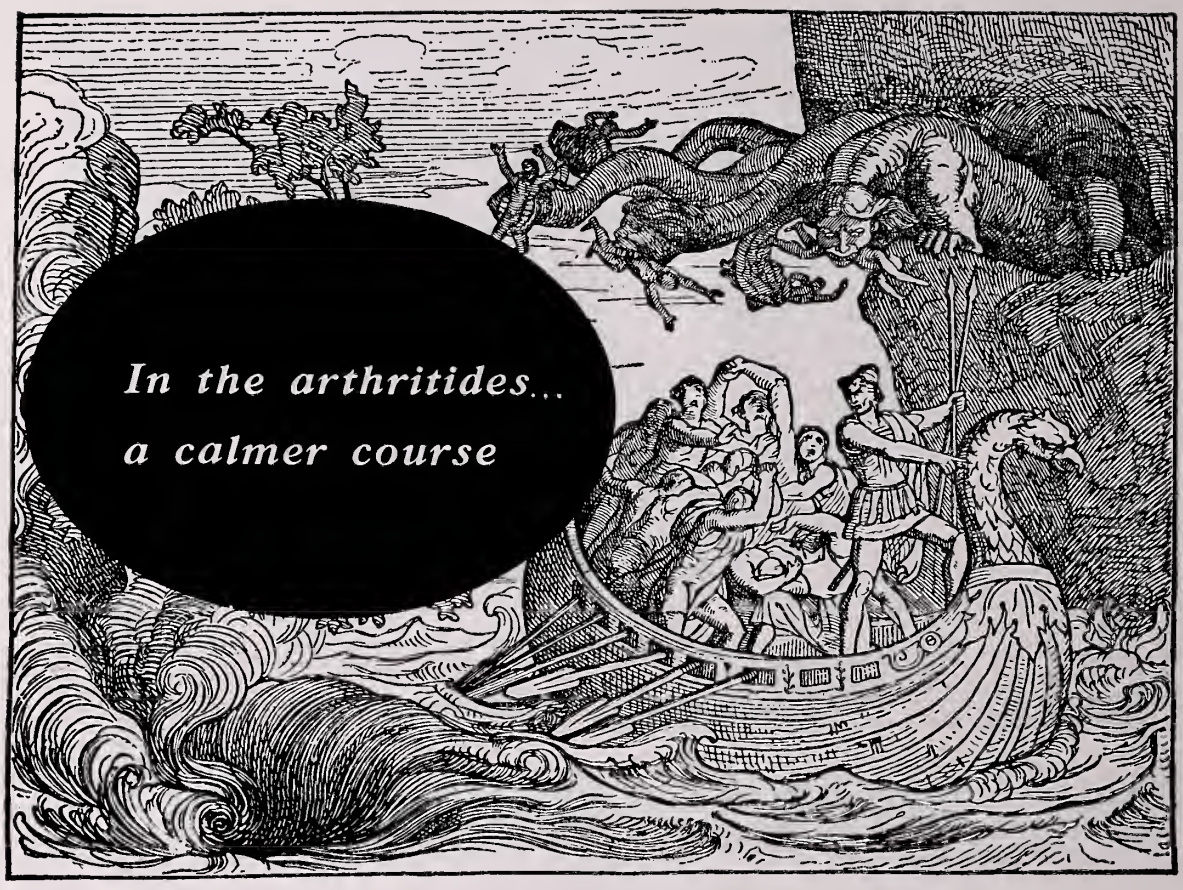
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[1]*Busse, E.A.: Treatment of Rheumatoid Arthritis by a Combination of Cortisone and Salicylates. Clinical Med. 11:1105*

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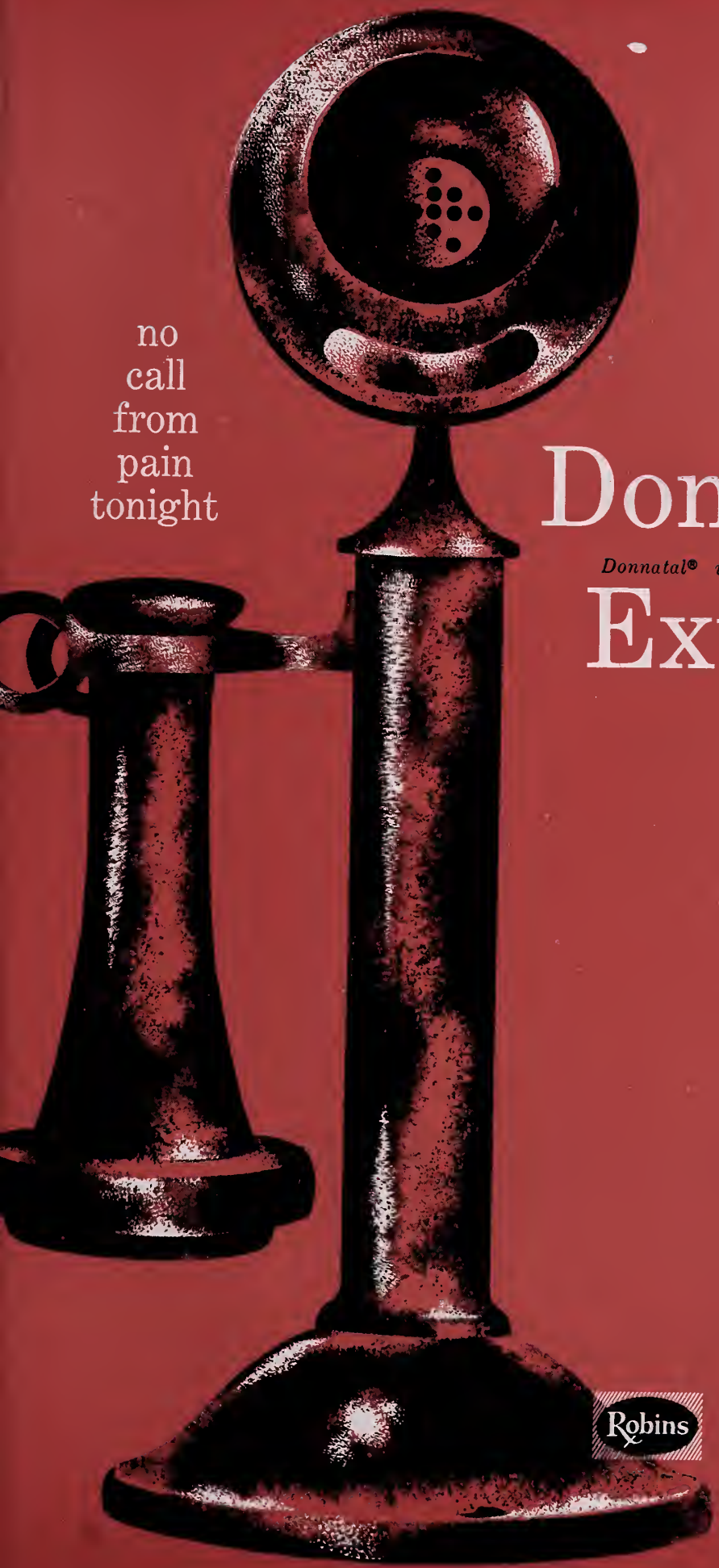
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1. Goodman, L. S., and Gilman, A.: The Pharmacologic Basis of Therapeutics, N. Y., The Macmillan Co., 1955; p. 127.

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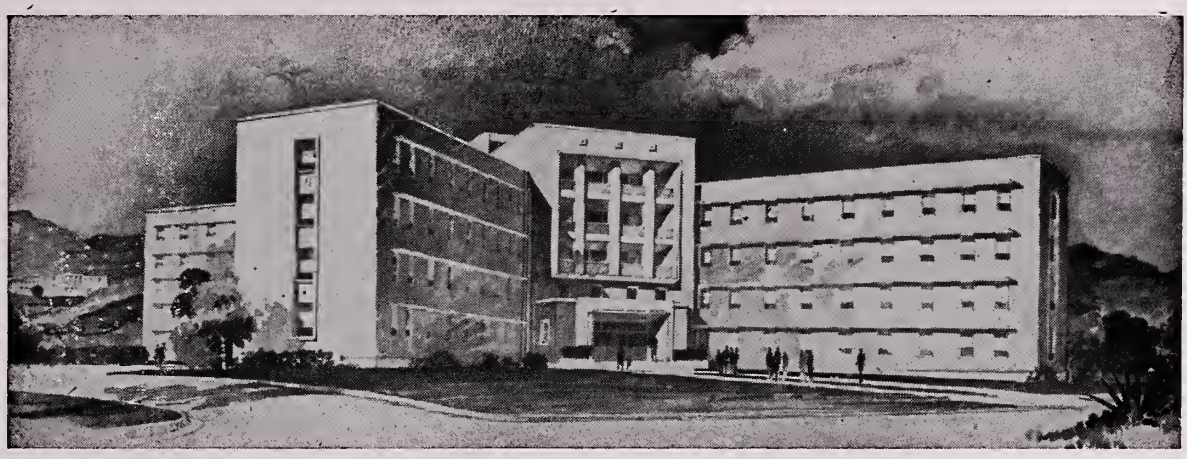
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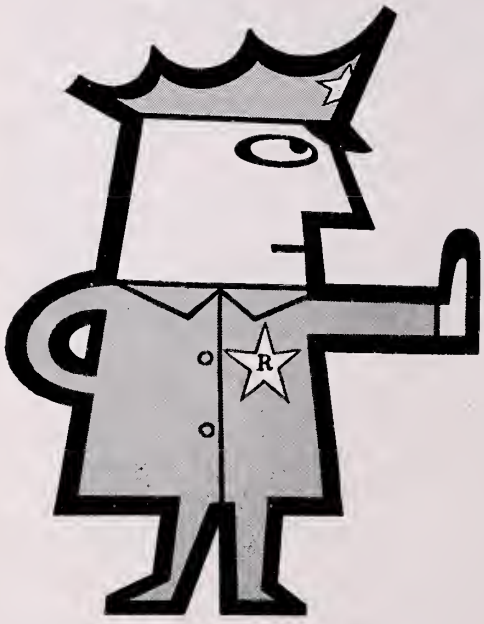
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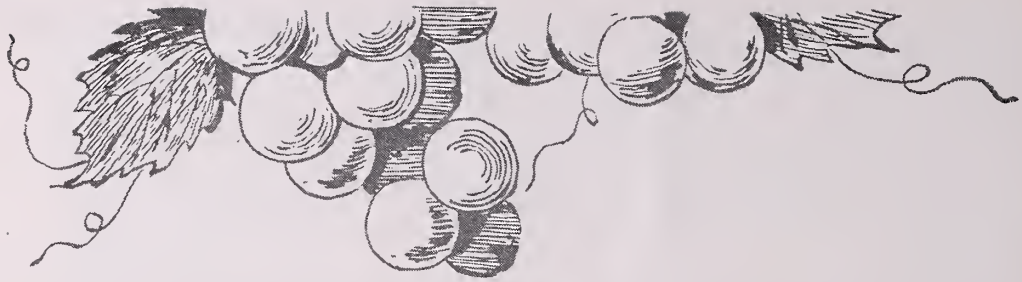
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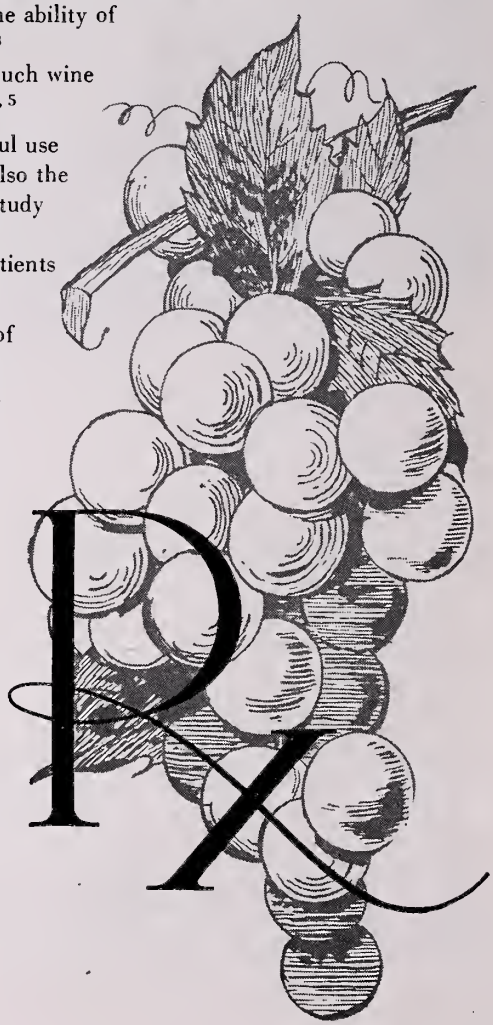
It has been popularly held that various types of alcoholic beverage are appetite stimulants, but objective laboratory investigations have clearly shown that alcohol itself, under controlled conditions, acts as a depressant to appetite.[1, 2]

Wine, however, the classic beverage of moderation, used as an aperitif, has been found to exert a profound stimulating effect on appetite and on the ability of both normal and anorexic patients to detect faint odors.[3] Goetzl and his co-workers have attributed this effect to such wine components as tannic acid, tartaric acid and acetic acid.[4, 5]

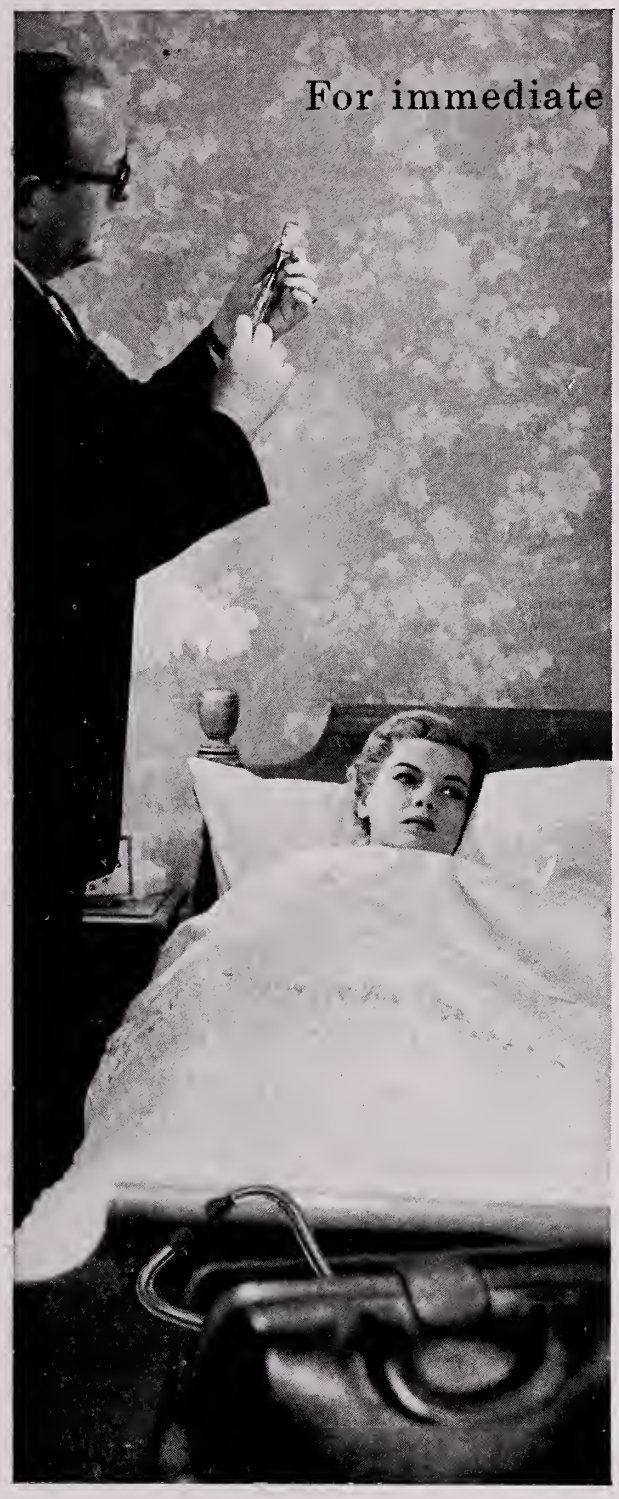
In actual clinical trials, Goetzl has reported the successful use of dry wines in increasing not merely the appetite, but also the food intake of patients suffering from anorexia. In one study on the appetite-stimulating action of wine, the average daily caloric intake in a substantial group of anorexic patients was increased from an average of 773 to 1228 calories.[6]

The above excerpts are taken from the brochure "Uses of Wine in Medical Practice" which describes the results of recent laboratory and clinical research on the medical attributes of wine. Herein are reported the latest findings on the value of wine as a stimulant to flagging appetite, as an aid to digestion, as a vasodilator, as a daytime and night-time sedative.

A copy of the brochure is available to you—at no expense—by writing to: Wine Advisory Board, 717 Market Street, San Francisco, California.



1. Margulies, N.R.; Irvin, D.L., and Goetzl, F.R.: Permanente Found. M. Bull. 8:1 (Jan.) 1950.
2. Irvin, D.L.; Ahokas, A.J., and Goetzl, F.R.: Permanente Found. M. Bull. 8:97 (Oct.) 1950.
3. Goetzl, F.R.: Permanente Found. M. Bull. 8:72 (April) 1950.
4. Irvin, D.L., and Goetzl, F.R.: Permanente Found. M. Bull. 9:119 (Oct.) 1951.
5. Irvin, D.L.; Durra, A., and Goetzl, F.R.: Am. J. Digest. Dis. 20:17 (Jan.) 1953.
6. Goetzl, F.R.: A Note on the Possible Usefulness of Wine in the Management of Anorexia, unpublished.



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*Talbot, N. B., Crawford, J. D., and Butler, A. M., "Homeostatic Limits to Safe Parenteral Therapy." New Engl. J. Med., 248, 1100 (1953).

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Southwestern MEDICINE

VOL. XXXVII · NOVEMBER, 1956 No. 11

EDITORIAL

The Doctor Should Know

By Robert B. Homan, Jr., M. D., El Paso

The hospital bill is a frequent source of complaint as most physicians have discovered. During this era of spiralling inflation, hospital charges, like all other expenses, have risen to unprecedented heights. What do you, as a physician, do when you hear complaints in this regard? Do you merely shrug it off or perhaps agree that the charges are exhorbitant? If you do, you are missing an opportunity to improve patient-physician-hospital relations.

The modern hospital is the physicians' very active partner in patient care, and, as such, deserves your understanding and confidence. Certainly, if anyone should know the answer to the question of hospital costs, it should be the physician who depends upon the hospitals trained personnel, specialized and expensive equipment and efficient operation. Perhaps some facts in this regard are worth discussing here.

Hospital Topics Article

In the June 1956 issue of Hospital Topics, the News Magazine for Hospitals, there is a very interesting article on nonprofit short-term general hospitals in the U. S. with comparative data from 1946 to 1954. During this interval the number of such hospitals has increased 25.6 per cent and the number of beds a similar percentage. The percentage of occupancy has decreased from 76.9 per cent to 72.5 per cent. The average length of patient stay has decreased from 8.8 days to 7.5 days.

On the financial side of this picture are the following facts:

1. The total expenses per patient day have increased in these years from $10.04 to $22.78 or 126.9 per cent.
2. Payroll expense per patient day has increased 167.5 per cent (from $5.11 in 1946 to $13.67 in 1954).
3. The number of full-time personnel per 100 patients has increased 32.7 per cent (from 156 to 207). There are two employees for each patient. The major cause for this increase is the shorter work week. Most hospital employees enjoy a 40 hour week as in other business or industry.
4. The hospital payroll constitutes 60 per cent to 65 per cent of all hospital expense. From the remaining 35 per cent to 40 per cent, all other expenses of hospital operation must be met — such as, food costs for patients and employees, general maintenance, replacement of equipment, supplies, linens, laundry, insurance, etc., etc.
5. Total income per patient day has increased from $10.48 in 1946 to $23.31 in 1954 — percentagewise 122.4.
6. Despite increases in income, the per cent of patient income to total income averages only 90.4 per cent. This means that many hospitals require donations to balance the budget.

Specialist Personnel

Adequate patient care requires highly trained personnel — management, nurses, dietitians, technicians. These "specialists" should be paid according to their training, experience and ability. It should be superfluous to reiterate that these services must be provided twenty-four hours every day including Sundays and holidays.

Your hospital is caught up with every business or occupation in this spiral of high costs and high salaries. Its product, specialized service, must increase in price as every other commodity or service becomes more expensive.

SARCOIDOSIS

Effects Of Cortisone In Sarcoidosis. A Study Of Thirteen Patients

Siltzback, L. E., Am. J. Med. 12:139, 1952

Results were very encouraging. Definite clinical and biopsy evidence of suppression of the disease process occurred in the majority of patients. Relapse upon cessation of cortisone was the rule, although sustained remission may sometimes occur.

Clinical Clippings, July, 1952.

CURRENT THERAPY

The Bioflavonoids in Obstetrics

By Harry W. Demarest, M. D., El Paso*

In recent lay publications considerable attention has been centered on the use of the bioflavonoids in obstetrics. This type of literature reports the use ot these compounds most commonly in the treatment of threatened abortion and the prevention of erythroblastosis foetalis. Thus, in order to keep abreast of the well-read patient, as well as medical science, a short discussion of the applied theories of the medication follows.

Bioflavonoids, Vitamin P, was originally described in 1936. In therapeutics it is usually combined with Vitamin C, and in further discussion this combination is referred to as the bioflavonoids. Discussion of the chemistry of these compounds is quite complex, the basic unit being the Gamma pyrone ring, to which the addition of hydroxyl groups, hydrogen atoms, magnesium ions, etc., results in the compounds known as the flavones, flavanones, catechin, rutin, and others. The biochemical activity of these compounds has been shown to directly effect capillary permeability, probably through several mechanisms, but mainly in the synthesis of hyaluronic acid which forms the cementing substance of the endothelial cells.

Continuing Controversy

In studies of threatened abortion a controversy has continued for more than a century as to whether decidual hemorrhage is a primary or secondary effect in the sequence of spontaneous abortion. Modern concepts favor the death of the embryo as primary, with decidual hemorrhage secondary. However, much evidence to the contrary has been presented by such investigators as Javert and Stander.

From their histologic studies of decidual biopsies they postulate that two primary mechanisms exist: (1) Venous distention, engorgement, and over distention which leads to hemorrhage, and (2) Continuation of this hemorrhage due to imbalance of bleeding and clotting factors. The former condition is prevalent in the physiologic increase in maternal blood volume, pelvic congestion, toxemia of pregnancy, coitus to orgasm, hot baths, and fright. The latter condition occurs with hypoprothrombinemia, afibrinoginemia, calcium deficiency, and Vitamin C and P deficiency.

Dramatic Showing

These authors have dramatically shown that during pregnancy the plasma Vitamin C level falls rapidly to a deficiency state between the twelfth to the sixteenth week of gestation. This coincides remarkably with the high rate of spontaneous abortion occurring toward the end of the third month.

In addition, one must also consider that as many as 30 per cent of gynecologic patients have been found to be deficient in these vitamins, which would indicate a high percentage of women initiate pregnancy in a deficient state. Clinically, this low Vitamin C and P level can be evidenced during pregnancy in nasal, gingival, rectal and dermal bleeding.

As concerns erythroblastosis, vascular integrity is of great importance, for if the maternal and fetal vascular systems can be maintained intact, no mixture of the incompatible blood types will occur. Thus there will be no maternal sensitization, no antibody reaction, and no destruction of fetal cells.

Summary

In summary, it is realized that spontaneous abortion may be the result of many factors, including hormonal imbalance, defective germ plasm, blighted ovum, poor implantation, uterine anomalies, cervical incompetence, and hemorrhagic tendencies. One must not neglect investigation and therapy of any of these factors.

The bioflavonoid therapy provides correction of only the latter condition. The use of the bioflavonoids in Rh incompatibility has some value in indirectly preventing erythroblastosis by maintaining the integrity of the maternal and fetal vascular system.

Commercially the bioflavonoids are marketed by several companies. U. S. Vitamin Corporation produces C. V. P. and Duo C. V. P., the former containing 100 mg. of Vitamin C and 100 mg. of Vitamin P. This preparation is comparable to Bi-Flavin, marketed by the Carr Pharmaceutical Company. Duo C. V. P. is twice the strength of C. V. P. Therapeutically, in threatened abortions two capsules of the bioflavonoids are given four times daily until the sixth lunar month. A similar dosage schedule is maintained in Rh problems until the seventh or eighth lunar month.

*Dr. Demarest this month is substituting for Dr. Jack A. Bernard, regular conductor of this section.

ACTH — BURNS

Effect Of Adrenocorticotropic Hormone On The Survival Of Homografts

Butterfield, W. J. H., et al., Lancet 1:737, 1952

The influence of ACTH on survival of homografts was studied in 3 burn patients. In 2 subjects the grafts survived for an unusually long time. However, all grafts finally degenerated. Length of survival seemed to be related to intensity of adrenocortical response.

Clinical Clippings, August, 1952.

Edited by Andrew M. Babey, M. D., Las Cruces, N. M.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

(Continued)

27. "It is an interesting observation that the patients who have repetitive attacks of meningitis usually have pneumococcal meningitis. In the last ten years we have had three patients who have had repeated attacks—one had four attacks of pneumococcal meningitis, a second had three episodes, and the third was a young boy with four attacks, who had a severe skull fracture as a result of an automobile accident". Louis Weinstein; *American Practitioner;* June 1955, P. 940.

28. "Penicillin is a dangerous drug when given intrathecally, and if it is given improperly. There is a limit to the dose to be administered. I have seen patients succumb to the administration of 260,000 units of penicillin given intrathecally; other writers report death in patients who have been given quantities as small as 100,000 units. On our service we never give an adult over 30,000 units; children never over 10,000 units." Louis Weinstein; *loc. cit.,* P. 941.

29. "I wish I could tell you how to treat tuberculous meningitis. I had this experience just a month ago: I was reading all the available literature on the therapy of tuberculous meningitis and I have never seen a more confused subject. Everybody treats it differently. I can tell you what we do—whether that is good, bad, or indifferent, I do not know. We are, at this point, giving streptomycin and isoniazid, and giving one month of intrathecal streptomycin." Louis Weinstein; *loc. cit.,* P. 942.

Celiac Diets

30. "All celiac diets, no matter how diverse, appear to have produced excellent results, which, after all, is not too surprising in a condition with a tendency to spontaneous improvement, even though it be slow and punctuated by relapses." L. Emmett Holt, Jr.; *Journal of Pediatrics;* April 1955

31. "We have at present no simple clinical method for measuring fat absorption and may as well admit it." L. E. Holt, Jr., *loc. cit.*

32. "The fact that a tumour in the flank can be pushed between a hand in front and one in the loin does not necessarily mean that the tumour is renal; all it tells us is that the tumour and the kidney move as one. In most cases a tumour that gives this sign is one arising in the kidney, but I have recently seen a large mucocele of the gall-bladder and a cystadenoma of the head of the pancreas give the same sign." Sir Heneage Ogilvie; *British Medical Journal;* Sept. 24, 1949, P. 664.

33. "I personally would discourage the injection of varicose veins at any stage. They should either be left alone or be treated by high saphenous ligation, a safe but no means simple operation that is nearly as badly done today as is that for hernia." Sir Heneage Ogilvie; *loc. cit.,* P. 665.

Knowledge is Power

34. "The human race has survived hitherto owing to ignorance and incompetence; but, given knowledge and competence combined with folly, there can be no certainty of survival. Knowledge is power, but it is power for evil just as much as for good. It follows that, unless men increase in wisdom as much as knowledge, increase of knowledge will be increase of sorrow." Bertrand Russell; *British Medical Journal;* Dec. 10, 1949, P. 1307.

35. "I think it is the duty of all who are capable of facing facts to realize, and to proclaim, that opposition to the spread of birth control, if successful, must inflict upon mankind the most appalling depth of misery and degradation, and that within another fifty years or so." Bertrand Russell; *loc. cit.,* P. 1309.

36. "Really high-minded people are indifferent to happiness, especially other people's." Bertrand Russell; *loc. cit.,* P. 1309.

37. "Psychologically, there are two opposite maladies which have become so common as to be dominant factors in politics. One is rage, the other listlessness." Bertrand Russell; *loc. cit.,* P. 1309.

"Pointers"

From the Case Records of Massachusetts General Hospital 1951*

(Continued)

25. "It is not possible to differentiate primary and secondary hyperparathyroidism on the basis of histologic study of the bone lesions, although in secondary hyperparathyroidism it is unusual to have cyst formation or pathologic fracture." *loc. cit.;* p. 540

26. "The preoperative x-ray finding that there was no expansile pulsation in the aneurysm did not influence my opinion particularly, as I have seen so many thoracic aneurysms that do not exhibit an expansile pulsation until they can be actually palpated

through a thoracotomy incision. I used to believe it was necessary to observe an expansile pulsation by fluoroscope in order to make a diagnosis of a thoracic aneurysm. From experience I now know that this is not true." *loc. cit.;* p. 544

27. "Patients with mitral stenosis who bleed usually do so from the bronchial veins, which is an attempt by nature to develop a collateral circulation." *loc. cit.;* p. 581

28. "I recall one case that Dr. Daniel Fiske Jones operated on years ago for an ischiorectal abscess in which the biopsy showed fat necrosis. Autopsy later on showed a pancreatitis that had dissected downward retroperitoneally into the pelvis and presented in the ischiorectal fossa." *loc. cit.;* p. 618

29. "I think the size of the liver reported by the radiologists frequently is not accurate; usually they do better in estimating the size of the spleen." *loc. cit.;* p. 659

30. "There are three anatomic considerations that come to mind when one encounters a stony-hard thyroid gland; carcinoma of the thyroid, thyroiditis of the Riedel type and a calcified gland." *loc. cit.;* p. 738

31. "The striking symptom, that of bad odors, is characteristic of what is called an "uncinate fit"; these phenomena have been correlated with lesions near the tip of the temporal lobe, specifically the uncinate gyrus." *loc. cit.;* p. 782

32. "In cases in which the localization is not already clear or the cause of the disorder fairly obvious, I believe electroenchephalographic studies rarely give useful or crucial evidence explaining the nature or localization of a lesion" *loc. cit.;* p. 785

33. "There seems to be a tendency to blame any pain that a diabetic has on a neuropathy. That has occurred a number of times in recent months when the pain was clearly typical of some other disorder, as, for example, a ruptured intervertebral disk. Great caution should be exercised in making a diagnosis of diabetic neuropathy." *loc. cit.;* p. 905

34. "In sarcoidosis, the terminal phalanges of the hands and toes particularly are involved in an osteoporotic process sometimes so severe as to be very readily recognized." *loc. cit.;* p. 982

35. "Joint involvement can occur occasionally in sarcoidosis, but it is not common." *loc. cit.;* p. 983

*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. They will appear regularly and cover the years 1951 through 1955.

Aphorisms Concerning Chest Diseases—Trauma

By E. S. Crossett, M. D., El Paso

1. With injuries to the chest wall, pleura or lung, the normal anatomical and physiological function of the thorax is disturbed. The objective of treatment is to restore function to normal or as near normal as promptly and effectively as possible.

2. Even with simple rib fractures, there is always an edema and an increase in bronchial secretions in the underlying lung tissue. If these secretions are not removed by coughing, they may result in bronchial obstruction with atelectasis and pneumonia developing in the obstructed portion of the lung.

3. The use of nebulized alevaire or steam is helpful in liquifying and loosening up secretions and may be used in selected cases. Bronchoscopy is rarely indicated for removal of secretions as it is no more effective than the tracheal catheter and is usually of only temporary benefit, while intra-tracheal aspiration with a catheter can be used as often as necessary.

4. Strapping of the chest is occasionally useful in relieving discomfort. Care must be taken, however, not to interfere with ventilation or respiratory movements. Several strips of tape applied to one side of the chest will give some measure of relief and usually will not significantly impair respiratory function.

Crushed Chests

5. With high-speed automobile accidents occurring with such frequency, it is not unusual to encounter the crushed chest. This injury destroys the rigidity of the chest wall and produces what has been termed paradoxical respiration. A crushed portion of the chest wall becomes softened or flail so that it moves in and out with respiration in a reverse or paradoxical direction to the rest of the chest wall. Added to this loss of the normal bellows action of the chest wall, there are often contusions or lacerations of the lung itself, with resulting edema or hemorrhage into the lung parenchyma and bronchi.

6. The crushing type of injury requires immediate measures to relieve the markedly impaired respiratory function. Fixation of the crushed chest wall, the removal of blood and air from the pleural cavity, and the maintenance of a clear tracheo-bronchial tree must be accomplished promptly.

7. Of the greatest importance in the treatment of this injury, is the use of tracheotomy. This procedure in severe injuries is imperative. Tracheotomy by-passes the larynx and thus reduces the resistance to the passage of air in and out of the trachea. This in itself

will reduce the effort required by the chest wall and the paradoxical motion is decreased. Also, tracheotomy cuts down upon the dead space from the site of the tracheotomy of the mouth, which amounts to 100 to 150 cc of air and thus increases the effective total exchange by that amount. Tracheotomy also provides a means for the effective removal of secretions and blood from the tracheo-bronchial tree.

8. With all severe chest injuries in which there is dyspnea or labored respirations, a gastric tube should be introduced into the stomach and suction applied until the patient stabilizes, as gastric dilatation often accompanies or occurs with this situation.

Real Danger

9. The real danger from a pneumothorax is the development of positive pressure or tension in the pleural cavity. This may occur from a valvular leak, from a lacerated lung or bronchus or from an open sucking wound of the chest.

10. Unless there is marked distress requiring emergency decompression, X-ray films of the chest with the patient in the upright position should be obtained to confirm the diagnosis. Films taken in a supine position will often fail to reveal a significant pneumothorax when it is present.

11. A very small pneumothorax usually requires no treatment other than rest and observation, although it must be realized that a small pneumothorax detected shortly after the injury may progress considerably in the subsequent 12-24 hours.

12. In dealing with an acute tension pneumothorax, a needle may be introduced in the second or third interspace anteriorly and air aspirated. This, at best, is only of temporary benefit and should be replaced as soon as possible with an intercostal catheter attached to a water sealed bottle.

TERRAMYCIN

Experiences With Terramycin In Urinary And Genital Tract Infections

Blakey, P. R., Canad. M. A. J. 66:151, 1952

Prophylactic Terramycin therapy was found to reduce the incidence of pyuria in patients undergoing genitourinary surgery. Good clinical results were obtained even in treatment of proteus infections. Dosage of Terramycin was 1.5 to 2.5 Gm. daily.

Clinical Clippings, July, 1952.

AIRSICKNESS

Effectiveness Of Various Drugs In Prevention Of Airsickness

Chinn, H. I., et al., Proc. Soc. Exper. Biol. Med. 73:218, 1950

Dramamine and Benadryl were equally effective in preventing airsickness. However, hyoscine hydrobromide, 0.65 mg., and Benadryl, 50 mg., administered together, were more effective than either drug alone.

Clinical Clippings, June, 1950.

Abstract

MANAGEMENT OF SUPPRESSION OF LACTATION

Shook, D. M.: Am. Pract. & Digest. Treat. 7:917 (June) 1956.

Whenever suppression of lactation is necessary or desirable, it should be accomplished with a minimum of discomfort and inconvenience to the patient and should not have unpleasant or dangerous sequelae. Stilbestrol, which has been used most extensively, has not been entirely satisfactory since secondary breast engorgement and lactation occur fairly frequently and withdrawal bleeding, at times severe enough to require transfusion, is encountered sufficiently often to constitute a serious objection to its use.

One of the estrogenic substances to become available recently is methallenestril, available under the trade name "Vallestril." Early reports on the use of this substance suggested that it was a potent estrogen and remarkably free from untoward side effects. Of special interest is the relative absence of withdrawal uterine bleeding. It was therefore decided to evaluate the effects of the drug for the initial suppression of lactation in comparison with other substances.

872 Patients

Shook studied 872 patients who were delivered of viable infants over an eight month period, and who did not nurse.

Vallestril was used in a daily dosage of 18 mg. for six days. The results were compared with those of stilbestrol and testosterone, placebo medication being used in the control group.

The results indicate that in the doses used Vallestril was highly efficient in preventing lactation, engorgement and pain, and, although stilbestrol was efficient in inhibiting lactation, a high incidence of re-engorgement or secondary lactation accompanied its use. Testosterone gave surprisingly poor results. It may be that the occasional delay in beginning the testosterone medication has adversely affected the results, but this delay was in no case longer than 24 hours.

Summary

In summary, Shook states that this study indicates that withdrawal bleeding and inhibition of normal involution of the uterus constitute a serious objection to the use of stilbestrol and that stilbestrol-treated patients usually have secondary lactation and breast engorgement; that testosterone is ineffective in suppressing lactation initially but is otherwise satisfactory in that secondary lactation and breast engorgement do not occur and there is no withdrawal bleeding; and that Vallestril does prevent breast symptoms and lactation initially, is not followed by secondary lactation and breast engorgement, does not result in withdrawal bleeding and does not inhibit normal involution of the uterus.

He concludes that Vallestril is the drug of choice for the suppression of lactation in non-nursing mothers.

MEETINGS

Southwest Obstetrical and Gynecological Society Will Meet in Tucson November 12 and 13

The Sixth Annual Meeting of the Southwest Obstetrical and Gynecological Society will be held in Tucson, Arizona, November 12 and 13, 1956, with headquarters at the Arizona Inn.

Guest speakers will be Dr. Bayard Carter, Professor of Obstetrics and Gynecology, Duke University, Durham, North Carolina; Dr. Franklin L. Payne, Professor of Obstetrics and Gynecology, University of Pennsylvania, Philadelphia; Dr. Ralph A. Reis, Professor of Obstetrics and Gynecology, Northwestern University, Chicago; and Dr. E. Stewart Taylor, Professor of Obstetrics and Gynecology, University of Colorado, Denver.

Officers of the Society are Dr. Hollis H. Brainard, Tucson, President; Dr. Louis A. McRae, Albuquerque, Vice President; Dr. Jesse A. Rust, San Diego, President-Elect; Dr. Zeph B. Campbell, Phoenix, Secretary; and Dr. Raymond Jennett, Phoenix, Treasurer.

Convention Committee

Members of the Convention Committee are Dr. Raymond R. Bates, Dr. Raymond F. Bock, Dr. Max Costin, Dr. George Fraser, Dr. Richard K. Hausmann, Dr. Gordon J. Hippert, Dr. Howard C. James, Dr. G. Arthur Janssen, Dr. Charles J. Newcomb, Dr. Hermann S. Rhu, Dr. William C. Scott, and Dr. LaVern D. Sprague.

A cocktail party and banquet have been planned for 7 p. m. November 13 at the Arizona Inn. Dress will be semi-formal; master of ceremonies will be Dr. Charles J. Newcomb. A program of social activities has been planned for physicians' wives.

Reservations are to be made directly with the Arizona Inn with time of arrival and departure to be indicated.

Founded Six Years Ago

The Southwest Obstetrical and Gynecological Socie-



Dr. Carter



Dr. Payne

ty was founded six years ago "to aid in the advancement of knowledge and improvement of Obstetrical and Gynecological practice in the Southwest United States".

Inasmuch as there are no medical schools in the area covered by the Society, the group meets annually to hear outstanding men in its field. The meeting is a family affair for physicians and their wives and is designed to provide an opportunity for the discussion of common problems in the field of Obstetrics and Gynecology.

Membership is not restricted to Obstetricians and Gynecologists and is open to general practitioners who have a special interest in the practice of Obstetrics and Gynecology.

Membership in the Society may be acquired through the following steps: presentation of a letter of application to the Society's secretary with the endorsement of three members; approval of the application by the Society's council; and the payment of $25. The group is intended to be a select society with a high percentage of its membership in attendance at meetings.

PROGRAM

Sunday, November 11, 1956

8:00
Meeting of the Council of the Society

Monday, November 12, 1956

8:00
Registration Opens

9:45
Call to Order
Dr. Hollis H. Brainard, President, Tucson
Announcements and Introduction of Guest Speakers
Dr. Hermann S. Rhu, Tucson

Scientific Program — Morning Session

Presiding, Dr. Jesse A. Rust, San Diego

10:00
"The Vaginal Approach to Pelvic Pathology in Obstetrics and Gynecology"
Dr. Bayard Carter

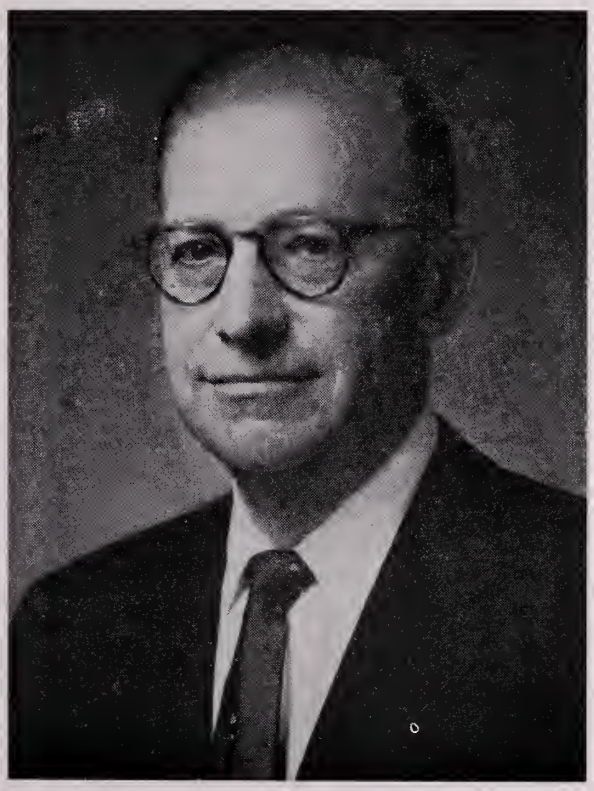
11:00
"Intra-Cavitary Radium for Benign Uterine Bleeding; A Twenty-Year Follow-Up Study"
Dr. Franklin L. Payne

Annual Business Meeting

12:00
Presiding, Dr. Hollis H. Brainard

Luncheon and Round Table

12:30
Presiding, Dr. Ralph A. Reis



Dr. Reis



Dr. Taylor

Scientific Program — Afternoon Session

Presiding, Dr. Preston T. Brown, Phoenix

2:00
"Management of Sixty-one Consecutive Patients with a Final Diagnosis of Carcinoma-In-Situ of the Cervix. Review of Results and Discussion of the Election of Hysterectomy versus Conservative Management."
Dr. E. Stewart Taylor

3:00
"Diabetes and Pregnancy"
Dr. Ralph A. Reis

4:00
"Endometriosis"
Dr. Bayard Carter

Evening

6:30
Informal Entertainment

Tuesday, November 13, 1956
Scientific Program — Morning Session

Presiding, Dr. Charles J. Newcomb, Tucson

9:00
"Non-Obstetrical Surgical Complication of Pregnancy"
Dr. Franklin L. Payne

10:00
"Placental Hormone Studies and Their Relationship to the Causes of Prematurity. Implications of These Findings in Regard to Prevention and Treatment of Premature Labor"
Dr. E. Stewart Taylor

11:00
"Complications of Obstetric Hemorrhage"
Dr. Bayard Carter

Luncheon Meeting

12:30
Presiding, Dr. Ralph A. Reis

Scientific Program — Afternoon Session

Presiding, Dr. Celso C. Stapp, El Paso

2:00
"Radiographic Studies of Urinary Stress Incontinence; The Therapeutic Application"
Dr. Franklin L. Payne

3:00
"The Adrenal Gland in Gynecological Practice"
Dr. E. Stewart Taylor

4:00
"Obstetric Analgesia and Anesthesia"
Dr. Ralph A. Reis

Evening

7:00
Cocktail Party and Banquet — Arizona Inn (Semi-Formal Dress)
Master of Ceremonies—Dr. Charles J. Newcomb

Texas District One Medical Meeting Scheduled in Pecos February 12

Dr. E. W. Schmidt of Pecos, President of District One of the Texas Medical Association, has announced that the annual District One medical meeting will be held in Pecos on February 12, 1957.

Details of the program have not yet been completed but are expected to be announced in the near future. Other officers of the association are Dr. H. D. Garrett, El Paso, Vice-President, and Dr. John P. Dunn, Pecos, Secretary-Treasurer.

Veterans Hospital, Grant County Society Schedule Program Series

A series of programs to be held at the Veterans Administration Hospital at Fort Bayard, New Mexico, in conjunction with the Grant County Medical Society of New Mexico, have been announced by Dr. I. C. Eldridge, hospital manager. They are as follows:

November 7:

Dr. Eleanor H. Valentine, Director of the Veterans Administration's Area Reference Laboratory, Denver, Colorado, "Bone Marrow Aspiration: A simple and useful diagnostic procedure".

December 5:

Dr. Charles D. Bussy, University of Texas Southwestern Medical School of Dallas, "Surgical Treatment of Peptic Ulcer".

January 2, 1957:

Details to be announced.

February 6:

Dr. Joseph H. Holmes, professor and Head of Laboratory Medicine and Clinical Pathology, University of Colorado Medical Center at Denver, subject to be announced.

March 6:

Dr. John S. Chapman, Assistant Dean of Postgraduate education at University of Texas Southwestern Medical School of Dallas, "Collagen Diseases".

April 3:

Dr. Charles J. Smyth, staff member of the Colorado Medical School at Denver, subject to be announced.

The hospital staff meets jointly with the Grant County Medical Society for the programs at 8 p. m. on the first Wednesday of each month. Meetings are held in the classroom, Ward 1, (first floor of the east wing of the hospital).

ORIGINAL ARTICLES

Leiomyosarcoma of the Urinary Bladder*

By Robert F. Thompson, M. D., F. A. C. S., El Paso

Tumors of the urinary bladder of mesothelial origin are very rare in comparison with the usually encountered neoplasms of epithelial origin. And, even though sarcoma of the urinary bladder is a very uncommon type of tumor, leiomyosarcoma is even more rare.

Historical

The first case of sarcoma of the bladder was reported by Senflteben in 1861. The first case of leiomyosarcoma was reported by Gussenbauer in 1875. Since then various authors have reported instances of this rare condition.[1-35]

In 1939 Kretschmer and Doerhing reported a case of leiomyosarcoma of the bladder and summarized 14 cases from the literature. In the same year Shivers and Henderson reported a case. In 1943 Crane and Trembley added seven more. Other authors who have reported one case each are Petkovic 1946; Lev and Bell 1947; Mackles, Immergut, Grayzel and Cottler 1948; Jones, Morus and Ross 1950; Bergman and Kugel 1950; Katzen 1952; Thomas and Abernathy 1952.

Price reviewed the literature in 1952 and found 17 cases since 1943 to be added to the 19 instances reported up to that time. To this number he added one case. Cecil reviewed the literature again in 1953 and reported an instance of this rare tumor. The most recent contribution to the literature on this subject is by Sadler, Shelley and McCarty in 1954. Presumably the case to be described in this presentation is the fortieth instance of leiomyosarcoma of the bladder to be reported.

Leiomyosarcoma is three times more common in males than in females. It may occur at any age, yet it has been more often found in middle-aged individuals.

Principal Symptom

The principal symptom is hematuria but in many cases there is no blood in the urine and the main symptom is severe dysuria, produced by the marked infection which accompanies the growth.

The tumor is usually lobulated and pedunculated and may occur in any portion of the bladder. Fortunately it is often located away from the ureteral orifices. The growth extends both locally and by metastasis and the prognosis is grave.

Reference to the literature shows a marked variation as to the degree of local infiltration and spread by metastasis. The older writers commented on the extremely high mortality from rapid metastases and urinary sepsis. The sepsis was produced by obstruction to the ureters and vesical neck by the growth and pressure of the tumor mass.

The more recent authors have observed that the tumor did not behave clinically in so severe a lethal fashion as was suggested by the histological picture, and that metastasis does not occur in the rapid, usual manner of other malignant growths. Further, it has been noted that these tumors grow outwardly and peripherally for some time before the mucosa is involved by inward extension with resulting hematuria. This was true with the case to be described. Whereas formerly the prognosis was very grave, at the present time, judging from the results in the more recent literature, a more hopeful attitude may be adopted concerning the possible beneficial results of surgery.

Apparent Cures

Several apparent cures have been reported after surgical removal of the tumor and there has been less evidence of recurrence or metastasis mentioned by recent authors as compared with the descriptions given by older writers. But despite this, there is only one 5-year cure to be found in the literature and the tumor must be considered as being extremely malignant.

The patient of Bergman and Kugel lived 2 years following cystectomy and bilateral ureterocutaneous anastomosis. The patient of Hager and Hunt lived 4 years after operation. Lev and Bell's patient was well 1 month after operation. There was no follow-up comment. Cecil's patient was enjoying good health 15 months after operation, while the woman upon whom Peiris and Cooray performed total cystectomy with ureteral transplantation, was alive and well 2 years later.

Longest Record

The longest followup record is mentioned by Smith and Kellert whose patient was alive and well 10 years after segmental resection of the bladder wall.

The next longest successful report is by Sadler, Shelley and McCarty whose patient was alive and well 3 years, 3 months after resection. The patient of Lash was reported well 3 years after operation. Cibert and Durand reported a patient as doing well 2 years, 8 months following cystectomy and ureterosigmoidostomy.

The patient reported by Petrovic was alive and well 1½ years after segmental resection. Flint and

*Presented at South Central Section, American Urological Association, San Antonio.

Dick's patient was well 1 year following the same type of surgical procedure. Price reported his patient well and without evidence of recurrence 6 months after segmental resection.

Very probably, the more favorable reports in the literature during recent years have been due to earlier and more complete removal of the tumor and with the accompanying infection being better controlled by modern antibiotics and urinary antiseptics.

Case Report

A man aged 57 was first seen on May 20, 1954, complaining of severe urgency, frequency and dysuria. The symptoms had been present for several years but had become much worse in recent months. A voided specimen of urine was extremely foul and purulent, containing a large amount of sloughing, sandy debris.

Cystoscopy disclosed the vesical mucosa to be greatly inflamed with the presence of a large amount of sandy and sloughing material on the bladder floor. Considerable irrigation was necessary for proper vision. Several masses covered with slough were observed to be projecting from the right upper wall of the bladder.

Operation (May 25, 1954): Under spinal anesthesia the bladder was opened and a huge, infiltrating, lobulated tumor was found involving the right lateral wall and dome. It was covered with a thick necrotic membrane. An extensive segmental resection of the bladder was now performed removing the tumor mass completely. The small remaining portion of the bladder was sutured and the wound was closed without suprapubic drainage. An indwelling Foley catheter was left in the urethra.

Gross pathology: This specimen represents the larger part of the urinary bladder (fig. 1). The specimen is oval in shape and measures 10 cm. in greatest diameter. The mucosa of the urinary bladder has been transformed into a tumor mass. The tumor mass is composed of firm, pinkish-gray tissue, which projects into the lumen of the urinary bladder and forms irregular nodules which measure up to 5 cm. in greatest diameter. These nodules are covered with a necrotic membrane. On section the tumor has a thickness which varies between 1 cm. and 4 cm., and is composed of grayish-white, firm tissue, which in several places has grown up to the serosa of the urinary bladder. In other places a thin layer of muscle tissue about 4 mm. in thickness has been preserved. In addition a yellow necrotic membrane measuring 8 cm. in greatest diameter is present. Also present are several membranous fatty pieces of tissue which measure up to 10 cm. in greatest diameter.

Microscopic examination: The mucosa of the urinary bladder is destroyed by an ulcerative process. The wall is taken up by a tumor which is malignant in character. In the more cellular areas, the tumor is composed of elongated sheets of spindle-shaped cells with large, irregular nuclei with large nucleoli, and with many mitotic figures. In other places the tumor elaborates a large amount of collagenous intercellular substance with heavy scarring. The tumor is invading diffusely and is present on all sections taken from the wall of the bladder. See figure 2.

Special Studies: The basic pattern on hematoxylin-eosin shows the bundles of tumor cells with elongated, irregular nuclei and many mitotic figures. In the Van Gieson stain the tumor definitely accepts picric acid, which rules out collagenous fibers and the fibrosarcoma group. In view of the fibrillary pattern of the tumor, we are inclined to accept a sarcoma of muscular origin. The Zenker fixed material of this tumor stained with a Mallory phosphotungstic hematoxylin failed to reveal any cross striation. Therefore, we are excluding the origin from striated muscle for this tumor.

Final diagnosis: Leiomyosarcoma of the urinary bladder.

Convalescence was uneventful except that a large abscess developed in the wound. When this was drained, the temperature returned to normal and the remaining convalescence was uneventful, yet prolonged.

Four months later leakage of urine occurred suprapubically and the patient experienced some difficulty in urinating. Cystoscopy disclosed the recurrence of marked bladder infection with the development again

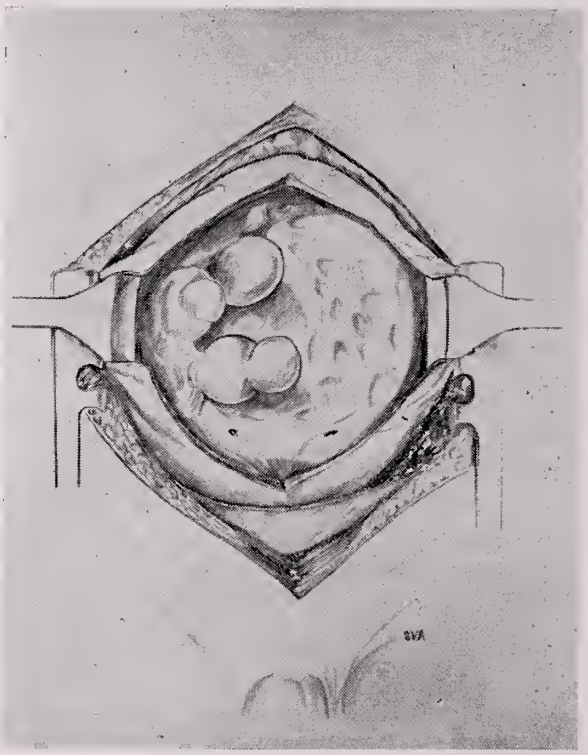
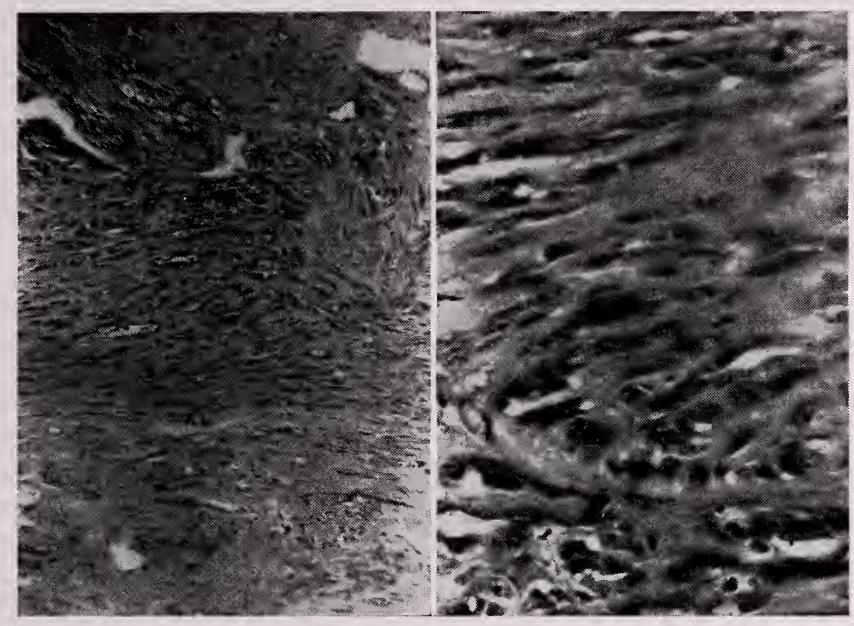


Fig. 1. Appearance of tumor found at operation

of a great amount of sloughing which was seen to be coming from the right lateral surface of the bladder.

The patient was again hospitalized at which time steps were taken to combat the infection; deep x-ray therapy was also instituted. He appeared to be considerably benefited by the x-ray treatments and after leaving the hospital he was able to return to his work in Mexico.

For some time there was no word from him and he was not seen again. Later, it was learned that he died from urosepsis in May 1955, one year after the operation.



A *B*

Fig. 2. A, low power photomicrograph showing sheets of elongated spindle cells. B, high power photomicrograph showing cellular details with hyperchromatic, giant nuclei and mitotic figures.

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Emergency Management of the Burned Patient*

By S. T. Pascale, Capt. MC
William Beaumont Army Hospital, El Paso

Appraisal of the Burned Patient

Most of the basic requirements in the management of the burned patient are similar in military and civilian life, but the appraisal of the burned patient is more important in the military because of the problem of proper disposition from a forward area. The magnitude of injury is based on two principle factors, extent of injury and depth of burn. The extent of burn is expressed as the percentage of the total surface body area.

An efficient table for the rapid estimate of the extent of burn is the "rule of nines", as developed by Tennison and Pulaski. The head and each arm are given nine per cent, the anterior trunk and posterior trunk, and both lower extremities are given double nine or eighteen per cent; and the genitals are given one per cent. For children, the extent of burn should be increased for the head and trunk and decreased for the extremities.

Three Categories

Burns are divided into three categories based on depth, first, second and third degree. A first degree burn is characterized by erythema and involves only the outer layer of the epidermis. Healing usually occurs uneventfully in two to five days.

It is sometimes very difficult for even the most experienced surgeon to distinguish between second degree and third degree injury. The etiology of second degree burns is usually hot liquids or a short flash, while a third degree burn is caused by flame. A second degree burn is pink or mottled red, with blisters or weeping. It is painful or hypesthetic.

A third degree burn is white or charred, dry, and there is anesthesia in the area due to the burning of nerve endings. In appraising severity, other factors in addition to the extent and degree of the burn must be considered. Burns in some parts of the body are followed by such crippling defects that they should be regarded as serious even if they are of small extent.

These areas of functional importance are the face, hands, feet, external genitals and flexion creases. Burns of the respiratory tract are particularly serious, irrespective of the amount of surface area involved.

Disposition of the Burn Patient

It is important to classify burn patients according to the severity of the injury so that they can be directed to appropriate installations. The first priority includes all patients who have impending shock as a result of burns involving more than twenty per cent of the body surface, and those who have burns complicated by other injuries, such as fractures or major soft tissue injury.

After emergency treatment the patient should be transferred to the nearest mobile army surgical hospital. Second priority patients are those nonambulatory patients in whom less than twenty per cent of the body surface has been burned. These patients usually do not require intensive treatment for shock and are therefore not considered to be emergency cases.

They can be transported to the nearest evacuation hospital for definitive local wound care. Walking burn cases can be sent to an evacuation hospital for early care and if grafting is necessary, will be sent to a general hospital.

Care of Hospitalized Burn Patients

Patients with moderate or critical burns should be given emergency treatment and transported to a hospital immediately. If transportation requires less than half an hour the patient may be given a small dose of morphine and the burned areas covered with a clean sheet to prevent further contamination.

If transportation requires a longer period, infusion of a plasma volume expander should be started. Patients may be transported several hundred miles by air during the first twenty four hours without deleterious effects, providing fluid and electrolyte requirements are fulfilled in transit. General supportive therapy should take precedence over treatment of the local burn wound.

Morphine may be used for pain. It should be given in doses of eight to ten mg., intravenously. Severely burned patients frequently thrash about and are most uncooperative because of cerebral anoxia rather than the fact that they are having pain. The immediate and rapid infusion of a sufficient amount of a plasma volume expander frequently transforms an unruly patient into a quiet and cooperative individual.

In major burns of more than twenty five per cent of body surface, an intravenous cannula should be inserted and a Foley Catheter should be placed in the bladder. Plastic tubing may be threaded into the vena cava from the femoral vein and used for several days for intravenous infusion.

Immediate Tracheotomy

In the event that respiratory burn is suspected, an immediate tracheotomy should be performed. This procedure should be carried out as soon as there is suspicion of tracheobronchial damage, because to de-

* From Symposium on Surgery in Acute Trauma delivered at William Beaumont Army Hospital, April 1956

lay until there is positive evidence of respiratory difficulty may be too late.

A tracheotomy should also be performed when there is a full thickness burn of the face. Tetanus prophylaxsis should be administered and anti-biotic therapy instituted. Penicillin and streptomycin should be used intravenously during the first twenty four to forty eight hours and may be continued intramuscularly after the period of shock has passed.

Supportive Therapy

Burns are characterized by capillary damage. Edema follows burning because of vasodilatation and capillary permeability. Contrary to general belief, the visible surface losses constitute but a small fraction of the fluid lost from the effective circulation.

Most of this fluid that is lost functionally is sequestrated beneath the burn wound. Third degree burns are even more misleading because they are characterized by a dry surface. The hard eschar may prevent obvious edema; nevertheless, large volumes of fluid extravasate into the deep tissues.

Minimum Therapy

In general, burns in adults that involve less than fifteen per cent of the body surface require only a minimum of supportive therapy. Colloid solutions are not necessary and fluid requirements are satisfactorily met by an orally given electrolyte solution.

A well-refrigerated salt-soda solution containing three grams of sodium chloride and one and one half grams of sodium bicarbonate per liter given orally is well tolerated by most patients. This solution is hypotonic and contains seventy millequivalents of sodium per liter. Isotonic electrolyte solutions are unpalatable and are tolerated very poorly orally.

Intravenous Replacement Therapy

Intravenous replacement therapy is required in more extensive burns. Several formulas have been reported by various clinics to estimate fluid requirements. These should serve as a general guide but should not be an exact indication, because variations will always be present in the individual case, such as extremes of age, general physical condition, cardiopulmonary status.

The most popular formulas are those based on weight and per cent of body surface burned, as advocated by Dr. Everett Evans of Richmond, Virginia. We will present here the modification of this formula used by the Surgical Research Unit at Brooke Army Hospital.

The requirements for the first twenty four hours are computed as follows: *colloid* (blood or blood volume expander) one half cc per kilogram of body weight for each per cent of body surface burned; *electrolytes,* 1.5 cc per kilogram for each per cent of body surface burned; and approximately 2000 cc of glucose in water (this figure is governed by the amount of urine output). The requirements for burns involving more than fifty per cent of body surface are calculated as though only fifty per cent had been burned.

Plasma Suggested

In second degree burns, plasma or plasma volume expander such as Dextran may be used. Whole blood is the colloid of choice in third degree burns. The electrolyte requirements are best fulfilled by the use of a balanced salt solution such as lactate Ringers, rather than glucose in isotonic saline solution.

Extensively burned patients have a tendency to develop a metabolic acidosis, and the increase in the chloride ion following infusion of saline only tends to potentiate this acidosis.

Since fluid losses are more rapid in the first few hours after injury, approximately one half the twenty-four hour requirement should be given in the first eight hours.

In the second twenty-four hour period, requirements of colloid and electrolyte are one half those of the first twenty-four hours. In addition, the patient needs approximately two thousand cc of glucose in water.

Fluid Administration

The rate of fluid administration must be altered to ensure a urinary output of at least 30 cc and not more than 50 cc per hour. Also a falling blood pressure would obviously be an indication for a more rapid rate of fluid administration.

After forty-eight hours the moderately burned patient will be able to take oral fluids adequately and he will adjust to his own needs. But the critically burned patient may still present problems in fluid and electrolyte balance.

The serum sodium level should be followed during this period, and enough free water must be given intravenously to be sure that the serum sodium level does not rise above 150 millequivalents per liter.

This is important because a marked rise in serum sodium level means hypertonicity of the interstitial fluid, which will draw water from the cells and lead to intra-cellular dehydration.

Hematocrit Good Guide

After the first forty-eight hours the hematocrit serves as a good guide as to the adequacy of the blood volume. Sufficient blood transfusions should be administered to maintain a hematocrit of forty-five per cent.

When food is not tolerated by mouth the administration of potassium should be started intravenously on the second or third day, and continue until adequate oral intake has been established.

From eighty to one hundred twenty millequivalents

of potassium daily should be given, and as long as urinary output is adequate, overdosage will be no problem.

Nutrition

There is a tremendous loss of nitrogen after a burn and this persists until all the open wounds are healed. The Surgical Research Unit at Brooke Army Hospital found that in severe burns there was a loss of nitrogen of twenty five grams daily.

These patients lost about one pound daily during this catabolic phase. The aim in the nutrition of burns is to maintain a maximum intake of proteins, calories and vitamins. This may be carried out with tube feedings of a high protein liquid, if the patient cannot maintain adequate intake.

Hormone Therapy

There has been great discussion about the use of ACTH or cortisone in the acute burn as a supportive measure. It is now felt that the patient liberates enough adrenocortical hormone after the insult of a burn, so that additional hormone therapy is not necessary.

This may even be detrimental, because there is ample evidence that the administration of these hormones diminishes the patient's resistance to infection, which is a major problem in all burns.

Problems in Atomic Warfare

The treatment of casualties in an atomic disaster must be directed to methods where maximum efficiency can be attained because of the enormous number of casualties expected. In an atomic blast, two types of injury occur.

Initially, large numbers of casualties will result from thermal burns, crushing injuries, and blast effects. Injury from ionizing radiation, though sustained at the time of the blast, does not manifest itself for five to fifteen days. The irradiation syndrome is characterized by infection, abnormal bleeding, anemia (hypoplasia of all elements of the bone marrow), and malnutrition.

Immediate Casualties

The treatment of the immediate casualties will be directed mainly to patients with burns, blast injuries and shock. With large numbers of burns, it would seem that the exposure treatment would be the most efficient local treatment, if no contra-indications exist. All wounds should be debrided as early as possible and anti-biotics should be used liberally to reduce wound infections.

Any wound not healed by the end of the first week will break down further in the second or third week, (at which time there is marrow aplasia and pancytopenia). No surgery should be performed after the fourth or fifth day, if possible, because of the bleeding tendency and lowered resistance to infection. Elective surgery should be postponed for three to six months.

Therapeutic Programs

Therapeutic programs for irradiation sickness should include frequent blood transfusions, antibiotics, fluid and electrolyte balance, and a soft, low roughage diet because of the high incidence of extensive ulcerations of the entire gastrointestinal tract.

DENTAL CARIES

Selenium And Dental Caries

Hadjimarkos, D. M., et al., J. Pediat. 40:451, 1952

Selenium, a trace element, is a normal soil constituent. It is absorbed from soil in minute quantities by vegetation. The amount of selenium excreted in the urine mirrors the intake of this element. These investigators found a direct relationship between the prevalence of dental caries and urinary selenium concentration. It is implied that selenium renders the teeth more susceptible to caries attack.

Oregon State College

Clinical Clippings, July, 1952.

DERMATOLOGY

Local Depilatory Action of Unsaturated Compounds

Flesch, P. & Goldstone, S. B., J. Invest. Dermat. 18:267, 1952

While testing certain depilatory compounds Flesch and Goldstone found that local application of human sebum caused loss of hair in laboratory animals. The depilatory action of sebum could not be attributed solely to its squalene content. Sebum has previously been thought of as an inert lubricating agent. This is the first indication that a substance secreted onto the skin directly influences hair growth. A clue may have been found to the etiology of common male baldness.

Clinical Clippings, July, 1952.

OBSTETRICS

Evaluation Of The Safety Of Corticotropin (ACTH) And Cortisone In Pregnancy

Margulis, R. R. & Hodgkinson, C. P., Am. J. Obst. & Gynec. 1:276, 1953

Twelve young pregnant multiparous patients received ACTH and/or cortisone for more than 3 weeks in total dosage exceeding 1000 mg., and 16 patients were given relatively small doses of the hormones for short periods. It was concluded that neither hormone significantly altered electrolyte balance, produced or aggravated toxemia, prevented ovulation or future conceptions, induced abortion, miscarriage or premature labor, or adversely affected the infant. Babies born of mothers receiving these hormones may, however, exhibit withdrawal symptoms suggestive of hypoadrenal cortical activity. There was no evidence that ACTH or cortisone caused edema or excessive weight gain, produced hyperglycemia or significantly elevated blood pressure of pregnant women.

Clinical Clippings, June, 1953.

Di-Phenthane-70 in the Treatment of Tapeworm Infections

By B. Lynn Goodloe, M.D., El Paso

Although the incidence of tapeworms in humans is low in the United States, the diagnosis is a matter of concern because of the unsatisfactory therapy presently available. Male Fern (aspidium oleoresin) has long been recommended, but the low efficacy in addition to toxicity and complicated dosing procedure make this drug most undesirable. More recently reports on quinacrine hydrochloride (1, 2) show reasonably good efficacy, but again the dosing procedure is complicated and toxic signs with emesis are frequent.

For several years Di-Phenthane-70* has been marketed in veterinary medicine for the treatment of tapeworm infections in various species of domestic animals (3,4,5,6). The success of this drug in veterinary medicine and the general lack of toxicity reported, warranted a trial in humans.

Method and Results

When an intestinal parasite was suspected and the stool examination found positive for tapeworm by the presence of ova or proglottids, the patient was placed on Di-Phenthane-70 as follows: The patient was weighed and the dose calculated on the basis of 200 mgs. per kg. of body weight. The required number of 0.5-gm. tablets were counted and dispensed to the patient with instructions to take two tablets every four hours with water until the complete dose was taken. No fasting or other preparatory measure was advised, and also no purge after dosing. The patients ate as usual during the dosing period. The patient is told to bring in stool samples for the day after drug administration and to watch his stool for gelatinous material. The patients had difficulty in discerning the gelatinous material as it is usually fecal colored, so they often reported mucous. These stool examinations revealed no formed worm, but occasionally a small section, not completely decomposed into gelatinous material, was found. Rarely were ova found. Many patients wait a month or so and come back with large weight gains and apology rather than stool specimens. Re-check for ova after about one month has revealed none in these patients so far, and none have reported passing segments of worms.

The data on the 20 patients on whom treatment was attempted are shown in the accompanying table. In patient No. 2 drug administration was stopped after only 5.0 grams of drug due to a serious concurrent illness unrelated to the tapeworm infection. Patients 16 and 17 were treated with an emulsion of Di-Phenthane-70 which was poorly tolerated. Emesis occurred and drug administration was stopped early. No adequate follow-ups were obtained on patients 19 and 22. As determined by clinical improvement and absence of stool ova or proglottids following treatment, cures were obtained in each of the 15 patients receiving the full dose and on whom follow-ups were obtained.

Patient	Dose In Grams	Hospitalized During Treatment	Species of Tapeworm	Toxicity	RESULTS
1	18	Yes	Taenia saginata	None	Excellent
2	5*	No	Taenia saginata	None	Insufficient Dosage
3	20	No	Taenia saginata	None	Excellent
4	14	No	Dipylidium caninum	None	Excellent
6	22	No	Taenia saginata	None	Excellent
8	20	Yes	Taenia saginata	None	Excellent
9	16	No	Taenia saginata	None	Excellent
10	16	No	Taenia saginata	None	Excellent
11	22	No	Dipylidium caninum	None	Excellent
12	14	No	Taenia saginata	None	Excellent
13	26	Yes	Taenia saginata	None	Excellent
14	20	No	Taenia saginata	None	Excellent
15	16	No	Dipylidium caninum	None	Excellent
16	4x	No	Taenia saginata	Yes	Insufficient Dosage
17	4x	No	Taenia saginata	Yes	Insufficient Dosage
18	22	No	Taenia saginata	None	Excellent
19	18	No	Taenia saginata	None	Patient lost for determining results
20	14	No	Taenia saginata	None	Excellent
21	20	No	Taenia saginata	None	Excellent
22	8	No	Taenia saginata	None	Patient lost for determining results

* Dosage discontinued due to other ailments which were too severe to continue this treatment.

x Patients No. 16 and No. 17 were given suspension with severe nausea reaction which was caused by basic chemical supply impurities — toxicity consisted of a severe gastritis.

Comments

This preliminary clinical trial of Di-Phenthane-70 in human tapeworm infections looks as if a good practical drug for this condition is at hand. Efficacy in this series was 100 per cent, and the bothersome and often impractical fasting and post-drug purging procedures are unnecessary. No toxicity of any type was evidenced when two tablets were administered at four-hour intervals. Thus treatment on an outpatient basis is easy and practical. The economic significance of this would be of special interest to those areas of the world where tapeworms are most common, and simple, cheap procedures a necessity.

When the drug administration extends over 24—to 48—hour periods and no purge follows, the parasite is killed and well disintegrated before appearing in the stool. This makes finding of the scolex impossible, but such can only properly be done in a hospital and this treatment eliminates the need of hospitalization. In this series of patients the clinical improvement and the absence of ova and proglottids in follow-up stool examinations had to be relied on for evaluating efficacy of the drug.

Two patients with infections of *Enterobius vermicularis* were treated with tablets in the same man-

(Continued on Page 684)

*Trade name for 2,2'-methylenebis (4-chlorophenol), marketed by Pitman-Moore Co., Indianapolis.

Odds and Ends in Occupational Medicine

By Jerome W. Shilling, M. D., Los Angeles

PART II

Industrial Medical Association

Originally the American Association of Industrial Physicians and Surgeons — Since April, 1951, Industrial Medical Association.

The original organizational group, purpose of the Association, trends of thought and current concepts and growth factors have been mentioned. In 1915 the original application for incorporation stated: "The object of this Association will be to foster the study and discussion of the problem peculiar to industrial medicine and surgery; to develop methods adapted to the conservation of health among workers in the industries; to promote a more general understanding of the purposes of the medical care of employees, and to unite into one organization members of the medical profession specializing in industrial medicine and surgery for their mutual advancement in the practice of their profession."

Little Change

The above objectives as stated 39 years ago are not in any material variance with current thought. Through the years there have been changes in the By-Laws with the most recent revision April 26, 1951.

Growth factors are related to, and a result of, growth of industry, and management and labor becoming more cognizant of the importance of industrial health services. The result being that more opportunities are developing for physicians to enter this field. In spite of this growth, membership in the I. M. A. and component societies is not proportional to physicians engaged in industrial practice.

Component Societies

In respect to component societies, Wilkins, G. F. [1] in part states: "Industries in this nation and physicians who serve them are unevenly distributed being heavily concentrated in some areas and sparse to absent in others. For this reason it never has been practical or feasible to establish components of our Association on a state society basis. Various groups with common industrial medical interests have grown up. Later a bond was formed between them and the I. M. A. by constituting themselves as a component society. I. M. A., in the earlier days, had no policy or set of conditions or standards regarding establishment of component societies."

"As a result, a few component societies came into being only to bloom briefly and then become defunct. Fortunately, however, others made steady progress both in activity and strength to become and remain the mainstay of the Association. The rather loose initial organization of the component societies, insofar as their relationship with the I. M. A. is concerned, has recently served to pose a number of problems. Happily, these problems have resolved to the satisfaction of both Component Society concerned and the Association."

By-Laws

By-Laws adopted April 1951 — Three members of the nominating committee of six must be presidents of component societies. This committee selects candidates for election as directors. The directors in turn formulate the policies and guide activities of the Association. Prospective members living in an area in which there is a component society, must enter I. M. A. by way of this component society. Rejection by a component society spells rejection by I. M. A. Over 50% now enter I. M. A. by way of component societies.

Decentralization of industries has been, and will continue to be, a forerunner to an increase in numbers of component societies. There are now eleven component societies. A division of a number of these societies into more localized segments appears most inevitable in the not too distant future. In fact, two such divisions will be completed before this year's end; this in addition to formation of new societies in regions not already covered.

District Counselors

Placed in effect in 1946 with six initial districts. In 1950 these original six were divided into twenty-two and now there are a total of thirty-two districts. An incomplete summary of the duties of a district counselor is as follows:

A. General

1. To advance the interests of the Association in their respective district.
2. To promote the cause of Industrial Medicine by means of improved methods and with use of facilities of the Association.
3. To constitute an active liaison for the Association in its relations with individual members, component societies and the public.

B. Specific

1. To convey information regarding I. M. A. services and activities to members and component societies.
2. To keep the Association advised of needs and desires of the membership within component societies.
3. To keep Association advised in respect to those who would qualify for any appoint-

ments in organizational activities of the Association, and/or to recommend to Association Headquarters those Fellows of the Association who merit consideration for elective office in the Association.

4. To stimulate interest in local and regional industrial health meetings.

5. To recommend Fellowship consideration of those in their district whom they feel qualify.

6. To promote the growth and strength of the Association by stimulating new membership.

7. To assist Association in selecting talent for their speakers' group to cover local, regional and national meetings or conferences.

8. To bring to the attention of Association Headquarters any Industrial Medical concern who merits consideration as a potential candidate for the Health Achievement in Industry Award.

9. To assist O. H. I. in appropriate selection of Regional Institute Representatives.

District Counselor

It becomes increasingly evident that the district counselor is the "grass roots", the "backbone", of the I. M. A.; a major factor in growth, character, and quality. A morning four hour meeting was first organized in Atlantic City at the Annual Meeting in 1951 and this portends to be a regular annual custom with increasing significance and importance. In the future, in addition to participation by district counselors and assigned officers, all officers and directors are to be included. (This will also be the stated custom in respect to the Annual Meeting of the Committee Chairmen.)

It has been further agreed that the Chairman of the Council on Industrial Health of the I. M. A. will be officially invited to attend the I. M. A. Directors' Meeting as an ex officio member.

Trend of The Times

In keeping with the trend of the times, and in the spirit and interest of our current concepts, our President, Dr. R. C. Page, is reorganizing in respect to assignment of responsibilities and, in effect, decentralization and spread of various efforts and responsibilities is the keynote. Briefly, in addition to specific assignments to all other officers, some of who heretofore have had assignments not sufficient to prepare them for the load that may be ahead, as of now and in the future, are to be held responsible for specific functions, and for efforts of Committee Chairmen and Directors who report through them to the President. These changes have been necessary in view of recent growth, and necessity of relieving the President and President Elect of duties becoming so arduous in nature.

To extend assignments to levels where formerly sufficient or material responsibilities have not been delegated, results in the development of a training ground at these other levels. In addition to now assigning new and added specific tasks to these officers, six teams of two directors (one serving second year and one serving first year) have been appointed to serve, guide, and act as liaison officers between the chairmen of the various committees and the assigned responsible officer. It requires but little calculation in respect to ultimate benefits that are to be derived from "lower echelon education" in organization, structure, efforts, and duties.

Extent of Endeavors

The magnitude and extent of endeavors is further emphasized by the fact that Officers, Directors, Committee Members, District Counselors and Regional O. H. I. Representatives are located and perform in practically every region in the United States, Canada, and Hawaii. The stature, scope, distribution, and active workers involved are further indicated by the following:

There are six Officers, twelve Directors, thirty-two District Counselors, twenty-six Committee Chairmen and one hundred thirty Committee Members. In addition prior to the end of this year there will be one or more O. H. I. Regional Representatives for each Counselor District. This adds up to two hundred thirty-eight participants all with specific assignments, widely dispersed, and working within the framework of the organization with, and reporting through, levels as shown in the organization chart [2].

Occupational Health Institute

History, purpose, objectives and structure of O. H. I. have been mentioned in the foregoing. The current status and most recent action covering the more pertinent elements is as follows:

On April 27, 1954, by action of the Board of Directors, and on April 28, 1954 by action at the Annual Meeting of the I. M. A., the trust was further amended. The name was changed from American Foundation of Occupational Health to Occupational Health Institute. It divorces the O. H. I. from the complete domination of the I. M. A.

To retain I. M. A. influence in the O. H. I., this amendment specifies that the President and President Elect of I. M. A., shall be members of the new Board of Trustees of O. H. I., having full voting power; the President of I. M. A. shall be a member of the Executive Committee of the Board of Trustees and, at no time, shall non medical trustees exceed the number of medical trustees. Other board representatives include management, nursing, and industrial hygiene.

Trust of I. M. A.

Since the O. H. I. is a trust of I. M. A., every member of I. M. A. will be interested in the increased activities of O. H. I. O. H. I. will continue to:

1. Carry on an educational program designated to promote sound health practices and programs in industry.

2. Award its "Certificate of Health Maintenance" to every organization or plant that merits it after a requested survey of its medical services has been made, and O. H. I. standards have been found in operation. (O. H. I. will continue to follow advice and guidance on professional standards as set forth by I. M. A.)

3. Provide educational material for medical directors and staff.

4. Establish fellowship programs for post graduate study in field of industrial medicine, nursing, and hygiene.

5. Programs designated to provide industry with personnel, trained to promote, organize, and carry on with proper medical procedures.

6. Develop research and other projects as needs are indicated and funds are made available.

Education

Most of us, while in school, never heard of term "Occupational Medicine", and with the occasional exception of being told there was such a thing as "painter's colic with lead line and wrist drop", we graduated with little or no "exposure" to this vast field.

Today approximately 80 per cent of medical schools in this country include the teaching of Occupational Medicine in their undergraduate curriculum and several more plan to start this year [3]. The low is one hour; the highest sixty-six hours with an average of 17.7 hours devoted to this subject. Teaching methods include didactic lectures, seminars, presentation of clinical material, demonstrations, laboratory work, and field trips. The initial program started in 1914, the remaining have been organized since 1934.

Recent Fund Grants

Recent fund grants of $2,176,904 aid 80 medical schools; S. Sloan Colt [4] "These grants are evidence of growing partnership between Medicine and Industry. Our industrial productivity, national security; even our capability for world leadership, all rests in part on high teaching standards in these schools."

In respect to graduate training in Occupational Medicine: The Committee on Education and Training — I. M. A. [5] report; nine universities offering such courses. A total enrollment of forty-two with a curriculum covering a period of nine to thirty-six months study. Degrees, Master of Science, Master of Public Health in Industrial Medicine, Master of Public Health, Master of Industrial Health, Master of Industrial Medicine, Doctor of Industrial Medicine, Doctor of Public Health or Doctor of Philosophy are granted following successful completion of prescribed course.

Didactic Work

Didactic work includes occupational diseases, public health, biostatistics, epidemiology, sanitation, industrial hygiene, personnel administration, human problems of adjustment, ventilation, industrial air analysis, and environmental physiology. Additional work includes research in plant assignments, and reports covering detailed surveys.

Fellowships are available in four universities and in the Atomic Energy Commission's specialized program at four training centers. Added to the above, many short courses not leading to advanced degrees are available.

Certification

Initially considered and discussed among I. M. A. officers, committee members, and members two decades ago. The path leading toward certification has been long, tortuous, and steep. It has been quite evident that this is a most desirable step in order to recruit into this specialty, younger physicians and surgeons with ability, vision, foresight, and initiative to make it equal in prestige and accomplishment to any of the specialty fields in medicine.

Suffice to mention here the current status omitting all the past and most of the current details. The Council on Medical Education, A. M. A., has been opposed to establishment of further independent specialty boards. Any approach to certification should be made through one of the existing specialty boards. It appears that application for the establishment of a Board of Occupational Medicine as an affiliate to the American Board of Preventive Medicine would receive favorable consideration from all quarters. The Board of Occupational Medicine would:

1. Elaborate its own training program; i.e. A. Two academic years. B. Field training one year.

2. Retain representation on the Board in proportion to certificates in its group.

3. Develop its own charter group.

Special Competence

Certificates would clearly certify special competence in either field (Preventive Medicine — Aviation Medicine — Occupational Medicine.) (The above approach has proven workable in Aviation Medicine.)

The Board of Directors, I. M. A., on February 22, 1954 officially agreed to the approach through the American Board of Preventive Medicine as a basis for certification of physicians in Occupational Medicine as a specialty. The present interim American Board of Occupational Medicine is made up of four representatives from A. M. A., four from I. M. A., and Dr. Robt. A. Kehoe, Chairman, representing the

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The Neurotic College Student

By B. F. Jenness, M. D., Director of Health Service, Texas Western College, El Paso

It is estimated by psychiatrists that two-thirds of the patients seen by the general practitioner of medicine are suffering from some disturbance of the mechanism by which psychic tension finds bodily expression.

Having an interest in this field of medicine during more than a quarter of a century of school practice I record here some observations and notes from the health records of cases of neurosis seen among college students.

Freudian School

According to the Freudian School of Concepts of the Psychoneuroses every neurotic person presents traits characteristic of a child. It has been stated by several authors that the so called emotional injuries in childhood are important factors in the neuroses of later years. These injuries make for a long neurotic period in the child, which is carried over into adolescent life.

It is therefore important to search the family and personal history for conflicts which the patient passed through in perhaps very early childhood.

These well known concepts have been the key factors in my studies of neurosis in students; and while the severe forms of psychoneurosis and psychosis have been rare, the milder syndromes of nervousness and pathologic fatigue, neuro-circulatory asthenia and anxiety neurosis have been frequently seen in our clinic.

Increasing Cases

In my earlier years as college physician I saw only occasional cases of neurosis, but I have been struck by the increasing number of cases in this emotional age when every disturbing phase of life of the teenager may bear down on an unstable nervous system, and when the effects of a broken home or lack of parental attention and love, so often seen now, only add to the burden of scholastic and school social life.

These deficiencies affect not only the psychological life of students but their physical well being, particularly nutrition. The result of this complexity of life in our youth reaches its peak in college where the transition from child to adult takes its toll in the neurotic student.

Other Causes

Of course physical disease as a cause of neurosis in the student, as in other patients, must not be overlooked; also such defects as immature psychosexual development, speech defects and body deformities causing frustration and inferiority complex.

Maladjustment due to physical defects may date from early childhood. I recall one such case of a girl, a brilliant student, who was admitted to the Health Service as a bed patient just before a final examination with a crying hysteria which continued for a day. She told with difficulty of some unknown fear, an imaginative frightening situation which she could not describe.

Physical inspection and her health record showed only one possible clue — she had a slight impediment in her speech. Late in the day she was discharged apparently normal.

Nervous Child

Her mother, contacted later, however, stated she was a nervous child and had stammered since childhood. Following up this case I found that she was suffering from an inferiority complex due to the defect which during childhood caused a social maladjustment when her playmates ridiculed her and mocked her speech.

As a result she was introspective, going about the campus with head bowed and avoiding social contacts. Her main anxiety seemed to be the fear that she could never marry because of her speech defect. This seemed to be a typical case of neurosis due to emotional injury in childhood.

Fear of Examinations

The neurotic student, otherwise normal, is often terrorized by written examinations. Such cases report to the Health Service with symptoms of gastroenteritis, the nausea and emesis lasting several hours.

This reflex is of course seen under various conditions in normal individuals, but in the neurotic child the symptoms are prolonged and in the case of students to the point of incapacity for hours or even days, and these cases are often repeaters in the Health Service.

Such cases go along with the opinion of psychiatrists that neurotic cases respond to slighter stimuli, and for a longer period than normal persons.

Thwarted Romances

Thwarted romances bring out a well known syndrome of neurosis in some cases. Symptoms simulating neuritis, pleurisy — even appendicitis will present themselves.

The female student whose emotional system is upset from this cause may become introspective, sullen, go without food and sleep or become hysterical, the so called "lovesick" complex.

But it is noted that these students who go so far as to simulate the reflexes of actual disease are nervous at other times, exhibiting psychologic fatigue, making much of trivial ailments in the Health Service, and constantly reiterating their symptoms.

Home is Factor

An interesting fact develops in many neurotic students whose history goes back to the events in the home as an important factor in their eitiology. These students will repeatedly visit the clinic for the sole purpose of confiding in the nurse, unburdening their worries, confessing their weaknesses, and seeking her guidance much as a troubled child would cling to its mother for solace. There seems to be no doubt that the nurse fulfilled in their minds the long needed counsel of a sympathetic parent.

French, of the Psychoanalysis Institute, Chicago, states that cases of asthma may be precipitated when an overpowering mass of conflict cannot be overcome by the ego. He believes that emotional conflicts in these cases seem to be directed toward fear of loss of the mother's love.

Neuro-Dermatitis

Circumscribed neuro-dermatitis is a strange phase of neurosis. Simulations of allergic rashes, erythema of thermic or other origin, eczema and urticaria have all been seen in the college clinic in neurotic students who suffered one or more of these dermal disturbances. These symptoms occurred in some cases when the patients were aroused mentally by anger, disappointment or worry.

One case, discharged from the Army for this malady, who gave no history of any form of allergy, would flush with an itching dermatitis, and during such attacks he could not account for even a probable cause except nervousness.

Asthenia Important

Asthenia, a type rather than a pathological condition, assumes importance in the neurotic syndrome, partly because of the so called neuro-circulatory asthenia which is sometimes seen in the asthenic individual, manifested by flushing, tremors. cardiac arrythmias and shortness of breath on slight exertion, and partly because of the psychogenic factors which may form the background of the asthenic type.

Whether from psychic or physical causes an unstable nervous system deprives the asthenic individual of normal muscle tone and co-ordination. Many of such students come to the attenion of the college doctor.

Handicapped as they are by a weak body, but a compensatory active mind, these students suffer an inferiority complex, and go beyond their physical capacity to detract attention from their shortcomings.

Heredity

The boy or girl who is said to be "not college material" may be of this type. Heredity manifesting itself in defective neurons and endocrines may be the cause of the limited capacity of the failing student. These stoop shouldered, flat chested, under weight students are a problem for the coach on the athletic field.

They are not just poor players, but physically incapacitated ones who have failed to compete with stronger, but not more ambitious, athletes.

These students are to be pitied rather than censored. They have reached their physical capacity, and no amount of sharp criticism or skull practice in the gym will develop the strength and alert reflexes necessary in competitive games.

Nervousness

Nervousness has become so common in our lives today that it is accepted as normal — a sort of by-product of an active mind. The truth is that a case of "nerves" may mean a potential neurosis. The arrest or cure of this much neglected mental aberration will require medical diplomacy as well as medicine.

The services of sympathetic but discerning physicians to readjust the patient's attention to things outside himself, and the help of occupational therapy, companionship and a carefully planned recreational program.

There is no doubt that mental disease is increasing. Every large hospital now has its mental wards and its consulting psychiatrists. A few years ago this service was found only in institutions for the insane.

Psychologic Wave

Under present world conditions neurosis seems to be a psychologic wave which is inundating our populations wherever psychic tension exists — and too often with heart and other bodily ailments trailing in its wake.

Whether the causes be emotional injuries in childhood or the price of ambition to excel in an era of high pressure living, it is being felt by our youth from the time they can drive the family car.

The race for education has sent old and young to college — some too young and others too old to keep the pace. Scholastic competition is taking its toll as is competition in industry, and there is no better place to observe the effects of the resulting neurosis than the college health service.

Odds and Ends in . . . . .

(Continued from Page 674)

American Academy of Occupational Medicine. As of October 10, 1954, the above described Board was authorized and definitely established, and is now on a permanent basis.

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Clinical Note on Mastitis

By Joseph B. Raddin, M. D., Phoenix

Definition

The definition of the word mastitis is "inflammation of the breast".

The word "Mastitis" is frequently used incorrectly to denote a painful nodule in the female breast which is not inflammatory. Chronic cystic mastitis, the term used to describe the common mass in the breast which is tender to palpation, is thought to be due to abnormalities of estradiol or progestin stimulation, or abnormal responsiveness of the milk glands or ducts to hormone stimulation.

Few "lumps in the breast" are cancerous, few need be biopsied or removed, and the vast majority are not a true inflammation of the breast, nor of a circumscribed portion or lobule of the breast tissue. They are readily amenable to hormone therapy and the earlier therapy is instituted, the more promptly will the tender mass disappear.

Etiology

My clinical experience suggests that the vast majority of painful nodules palpated in a female breast are due to disturbances of milk gland function caused by progestin deficiency. Almost invariably associated are menstrual irregularities or abnormalities of some nature. Ovarian hypofunction can account for these disturbances in that the progestin deficiency can only be due to failure of ovulation, failure of formation of an adequate corpus luteum, or failure of adequate anterior pituitary stimulation of the corpus luteum to secrete normal amounts of progestin.

Therapy

Ideal therapy is stimulation of abundant ovarian function. Since this will ordinarily take several months to accomplish, progesterone therapy can be immediately instituted in addition to other indicated medication.

Basic stimulating therapy for ovarian function is 0.1 mg. stilboestrol orally daily continued for many months.

In addition, since thyroid function, whether or not clinically depressed is almost always also below normal, one grain thyroid daily is usually indicated with the stilboestrol.

The only additional medication which has been of practical value in my practice to stimulate regular ovulation is the intravenous administration of gonadotropic hormone of pregnant mare serum. I personally prefer Gonadogen (Upjohn) because it is available in vacuum dried, sealed ampoules in individual size doses. Gonadogen is administered the fifth and tenth days following the onset of menstruation. Adequate dosage repeated two or three successive months is, in time, followed by evidence of regular ovulation. The basal body temperature chart is an excellent manner by which to follow progress of therapy.

To give some measure of prompt relief from the distress caused by the painful lump in the breast, 50 mg. of progesterone in oil is administered on alternate days for three or four doses the week immediately preceding the expected onset of menstruation. This course of progesterone is repeated successive months until the mass in the breast and local soreness disappears.

Suggestion

It is suggested that progesterone in oil, together with stimulation of ovarian function, be prescribed early when a tender mass is plapated in the female breast. "Continued observation" does not cure. Surgical removal is not indicated since the lesion of chronic cystic mastitis is due to a hormone abnormality.

One Sign More in Pediatrics

By Dr. Ramon Guzman P.,
Tacambaro, Michoacan

After my numerous observations in children whose ages varied between two and seven years, and in whom were encountered some or many parasites of the type known as ascaris lumbricoides, I was able to conclude that there is a constant sign that gives clinical evidence of this disease.

The sign in question is looked for by percussion and is encountered in the region of the epigastrium in the following manner: With the index finger of the left hand placed flat upon the region of the epigastrium there is made a light pressure downward carefully maintaining the position of this finger (the percussed one) all during the exploration; it immediately follows that there are given percussion blows with more intensity than those normally accustomed to being given but placing them spaced further apart.

When the sign is positive it will be possible to perceive clearly a kind of wave of return (at times several and rapid) of very short duration which corresponds to the wave of pressure that the percussion initiated in the epigastrium.

This wave of return is produced by the vigorous contractions of the ascaris excited by the wave of percussion. Naturally they are much more obtainable and prominent with a more important number of parasites.

MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

September 20, 1956

FREDERICK P. BORNSTEIN, M. D., EDITOR — CASE NO. 694
PRESENTATION OF CASE BY DR. I. A. BUDWIG
HISTORY BY DR. J. M. VEROSKY

Dr. I. A. Budwig

What I plan to do with such a long history and physical examination, rather than just read it over one time and then discuss it, is to go paragraph by paragraph and try and give some differential diagnoses as I go along. Then I will have Dr. Ravel go over the X-rays, and Dr. Verosky go over the electrocardiograms; then I would like the microphone again to try and sum up the case.

History

This patient was admitted June 1, 1956, and expired July 18, 1956. This was the third admission of this nine-year-old Mexican girl, brought to the hospital because of cough and fever. She had been in her usual state of health until two weeks before admission, when she developed a febrile illness with rash, diagnosed by her mother as regular measles. Though the rash had begun to fade, cough and fever persisted. There had been some shortness of breath and left anterior chest pain for three days. There had been a six pound weight loss during the present illness.

Dr. Budwig — Comment

I think we all will probably agree that this child did have measles and that she had a pneumonia secondary to her measles, which is not uncommon.

History Continued

Family: Father 45 years of age, mother 40 years of age, and nine siblings, all living and well; one sibling dead from unstated cause. No known tuberculosis, diabetes, rheumatic fever, cancer or mental illness. Prenatal, natal and neonatal: uncomplicated. Nutrition: had never eaten or gained well, always thin. Development: crawled at 11 months of age, walked at 18 months, talked at 15 months. Immunizations: diphtheria, pertussis, and smallpox in infancy. Contagious illnesses: none except for present illness. Contagious exposure: none except to measles before present illness.

Systemic review: Essentially negative except for cardio-respiratory system. Hospitalized elsewhere in 1947 and 1948 for pneumonia. Hospitalized in this institution twice in 1950 for bronchopneumonia. During the 1950 admissions, physical examination of the heart was normal. Between February of 1955 and January, 1956, the child was seen in cardiac clinic on nine occasions.

The findings during these visits are variously recorded, but generally there were noted: cardiomegaly; a palpable pulmonary closure; point of maximal impulse at apex; an intense pulmonic second sound, louder than the aortic second sound, splitting not recorded; a grade three systolic murmur in the second and third left interspaces adjacent to the sternum, contour not recorded; a loud apical systolic murmur was occasionally recorded without detailed description.

Electrocardiograms

Electrocardiograms in February and September of 1955 showed first degree atrioventricular block and 2 to 4 mm. depression of ST segments in I, II, III, AVF, and V-2 through V-5, but no abnormal R or S wave voltage. C-reactive protein, sedimentation rate, white blood count, and urinalysis were unremarkable. At no time were any symptoms of rheumatic fever reported. Prophylactic oral penicillin was prescribed but was taken only sporadically.

Dr. Budwig — Comment

What kind of heart disease did this child have at this time? Was she an old rheumatic, undiagnosed, that had shown up in the clinic and was quiescent at this time or did she have some type of congenital heart disease which may not have been noted on previous admissions to the hospital, or did she have one of the obscure heart diseases such as beri-beri, thyroid or one of the metabolic diseases, or any of the collagen diseases other than rheumatic fever?

History Continued (Physical Examination)

T. 103 P. 120 R. 30 P. B. 110/72

Weight 45 pounds. This was a poorly nourished and poorly developed child appearing moderately chronically ill. There was slight dehydration and mild dyspnea. There was mild inspiratory retraction of the intercostal spaces. There was a questionable friction rub over the right lateral and posterior chest, obscured by many coarse rales throughout both lung fields, specially in the bases. The heart was not enlarged to examination, and no murmurs were heard. There was slight tenderness of the right upper abdom-

inal quadrant, but liver, spleen and kidneys were not palpable. There was a fading generalized macular rash without desquamation. There was mild pallor but no cyanosis or clubbing.

Dr. Budwig — Comment

So, on physical examination again it would appear to be measles with secondary pneumonia, unresolved.

History Continued (Hospital Course)

During the first seventeen days of hospitalization the child was treated with rest, aspirin, and antibiotics, including penicillin, gantrisin, chloroaphenicol, tetracycline, and erythromycin. During this time, though chest pain became less, there was no general improvement. Temperature continued to spike to 101 to 103 degrees; poor appetite, malaise, weakness, unhappiness, cough, mild tachypnea, tachycardia, intermittent abdominal discomfort, and numerous rales continued.

By June 18, the following additional findings had developed: a weight gain of 2½ pounds; mild edema of face and legs; distention of neck veins, tenderness and enlargement of the liver (four cm.); poor heart tones; a grade three plateau medium and high frequency murmur throughout systole, loudest at the apex with good transmission to axilla and back; a grade two short mid-diastolic low frequency rumbling non-transmitted apical murmur; a basilic venous pressure of 190 mm.; gross cardiomegaly.

All antibiotics except oral daily dose of penicillin were stopped. The patient was digitalized; mercurials were given; oral sodium was restricted to 300 mg. daily.

Dr. Budwig: Comment

Obviously, this child is now in heart failure. Again it goes back to what type of heart disease did she have the previous year when she was in the cardiac clinic. She was started on oral metacortone with the thought that this child was in failure and probably was having a recurrence of rheumatic fever. I sat in on a discussion one Saturday morning on this child, although I didn't see the child, about the 25th of June. We discussed whether she had rheumatic fever and whether the cortisone therapy was the correct thing to do.

History Continued

Oral pregnisone-pregnisilone therapy was begun on June 18. The dosage employed was 60 mg. daily for two days; then 50 mg. daily for three days; then 40 mg. daily until two days before death, when the daily dose was decreased to 30 mg. and then to 20 mg.

Twenty-four hours after initiation of the above regime, the child was remarkably improved. The temperature became normal; the pulse rate decreased to 90; edema disappeared; the liver became non-tender and returned to one cm. below the costal margin; appetite was better; the child became less miserable, though never having true well-being; heart tones became of good quality.

The murmurs and rales continued, but dyspnea and tachypnae did not. Except for three isolated temperature spikes to 100, 101 and 103 degrees, the child did quite well for two weeks, though no further improvement could be documented after the first days of decongestive and steroid therapy.

Glycosuria appeared on June 20. Insulin was begun on June 28, doses usually being 5 units of regular insulin twice or thrice daily, with good control. No insulin was required after July 13, and no glycosuria recorded after July 15.

Dr. Budwig — Comment

So she had a transient glycosuria, cause unknown. Did she have diabetes, or was she a latent diabetic and did the cortisone therapy cause the latent diabetes to show up? Did she have severe tubular damage of any kind, or did she have some type of pancreatic involvement causing this transient glycosuria?

History Continued

Tetracycline was resumed June 26. Other therapy included oral vitamins and iron; aspirin had been given in a daily dose of 1.8 grams since the day of admission.

Oral moniliasis was noted on July 6 and persisted until death, despite local gentian violet and systemic mycostatin therapy.

Fever returned on July 5 and continued with increasing severity and moderate tachycardia. The child began to complain bitterly of left anterior chest pain. Chest findings became more marked, with dullness, bronchial breath sounds, and many fine and coarse rales, specially over the left lower chest. Dyspnea and cyanosis appeared and eventually became marked, together with malaise and weakness.

Oxygen was used during the last week. Cardiac findings did not change; there was no recurrence of hepatomegaly, edema, venous distention. During the last thirteen days, therapy included penicillin, ilotycin, chloroamphenicol, alevaire, and gamma globulin. However, the child continued to deteriorate; eventually she became semi-comatose, and died quietly twelve hours later.

Dr. Budwig — Comment

Obviously she still had her unresolved pneumonia which gradually became worse in spite of antibiotic therapy; whether the pneumonia was due to a fungus such as moniliasis, generalized, it is difficult to say, but I imagine that they did find moniliasis in the chest. She had a great amount of antibiotics, she had cortisone, she was a child that was below normal, mal-nourished, so everything was right for a generalized moniliasis.

History Continued (Laboratory Findings)

On admission: hemoglobin 13.3 gms. WBC 15,500 (76 segs., two stabs, 21 lymphocytes, and one basophile) voided urine, specific gravity 1.020; albumin 1+WBC 8-12/PPF, few granular casts. Subsequent

blood studies showed hemoglobin usually about 10 grams; WBC 12,000 to 15,000, always with left shift. Eosinophile count (June 25) 250; platelets (July 6) 410,000.

Urine sugar negative on June 12 and June 19; subsequently 1+ to 4+. Acetone usually negative, occasionally trace. Frequent voided urines showed yeast cells microscopically. Six blood cultures obtained between June 18 and June 21 were negative.

Three gastric washings for acid-fast bacilli were negative. Intradermal tests with coccidioidin, histoplasmin, blastomycin, and PPD Nos. one and two were negative, as was PPD #2 on June 18.

Antistreptolysin-0 166 units and C-reactive protein 4+ (June 19). Sedimentation rates: June 25 — 25; June 29 — 18; July 3 — 2; July 6 — 4; July 13 — 30; July 16 — 49.

Glucose tolerance (June 26); Fasting, 227; ½ hour, 370; 1 hour, 397; 2 hours, 405; 3 hours, 380; 4 hours, 375.

Throat culture (June 4): N. Catarralis; pneumonococci, yeasts; BVN (July 18) 45.5 mg%.

Dr. Budwig — Comment

This child obviously had some type of kidney disease, considering the laboratory findings on admission. If you just had the blood count alone, you would almost think of a nephritis, or perhaps a urinary infection. However, she did have some granular casts, so I think in the final diagnosis the picture of an acute urinary infection or one of glomerulonephritis should be considered.

Now, back to the blood count — to the eosinophile count 250, June 25, and this was after she had been on cortisone for a week. This is not markedly elevated; normal eosinophile count is probably around 100 to 200, so this is not markedly elevated, not one up in the thousands which would make you think of some type of Loeffler's pneumonia or something along that line.

Blood Cultures

Six blood cultures were negative. With the child having rheumatic fever, or presumed to have rheumatic fever, they probably were looking for subacute bacterial endocarditis to explain the variety of symptoms, the long course, and the poor response. I think having had six negative blood cultures doesn't absolutely rule the disease out, but it helps.

I think tuberculosis is something that should be ruled out, and I think we can rule out the fungus infections and the acid-fast infections. The only thing not recorded is a serology.

The chances are not great that this would be syphilis, but there is such a variety of symptoms here, and as one great medical man said, "If you know tuberculosis and you know syphilis, you know medicine"; and when you have a case like this, you can't be too far off in including them in the differential diagnosis.

Antistreptolysin titers are non-specific but here they are high enough that if you thought a child might have rheumatic fever it would help to confirm the diagnosis.

Chronically Ill

However, this child had a pneumonia, she was malnourished, chronically ill, and again, she might have had a strep infection with her measles and that would cause the antistreptolysin-0 titer and the C-reactive proteins. It doesn't necessarily clinch the diagnosis of rheumatic fever, which by the way, I don't think it was.

Sedimentation rates varied from 25 to 49. They did go down at one time, but I don't think they are too significant. Glucose tolerance test, fasting, was 227 which is high with a diabetic curve, but that doesn't necessarily mean that she had diabetes mellitus. Throat culture was not too significant. BVN was 45.5 which shows some retention.

Next come the electrocardiograms and I will ask Dr. Verosky to discuss those.

Dr. J. M. Verosky

July 2, which was late in her hospital stay, her rate had slowed with her therapy, the P-R interval was normal. Now of course the change in the P-R interval from a prolonged to normal under steroid therapy does not make the diagnosis of rheumatic fever. This is a non-specific effect that can be produced in perfectly normal people; if you put them on steroids, their P-R interval will shorten.

The Q-T interval for a child this age indicates good digitalis effect. The most delicate EKG finding in following digitalization in the child is the effect on the Q-T interval. The two to six mm. depression of the S-T segments to one, two and three and across the board essentially can mean one of two things; it could mean myocarditis; on the other hand, she had these findings a year before her acute illness and it could mean a biventricular hyperthophy.

Chest Leads

In her chest leads she had an RSR pattern in AVR with an S wave of 17 mm. In a nine-year-old child the mean S-wave in AVR is about 8 mm., the absolute top maximum ever recorded on a normal child is 16 mm. 17 mm. is abnormal, and points toward left ventricular hypertrophy. The V-1 RS pattern had an R of 30 mm. In this age child, the mean R wave is only 4 mm. but you can get R-waves up to 16 mm. 30 mm. is obviously grossly abnormal and points to right ventricular hypertrophy.

The S-wave is 28 mm; an S wave in a V-1 lead of a child this age has no real meaning. It is scattered all the way across the board but again, 26 is top normal, and 28 is abnormal and points toward

left ventricular hypertrophy. The V-6 QR pattern, the Q-wave of 7 mm., is abnormal. In a child of this age an R-wave of 60 mm. is of course horribly abnormal. The mean R-wave in V-6 in a 9 year old child is 13 mm.; top maximum under any conditions is 22 mm. so this is almost 3 times normal.

In summary, you can say that this child has normal conduction and has evidence of right and left ventricular hypertrophy and may have some evidence of myocardial damage in both right and left ventricles.

X-Ray Discussion — Dr. Vincent M. Ravel

I have the films in sequence. This is the first film taken. With a history compatible with measles and fever this is certainly the sort of broncholobular type of pneumonitis one sees following the acute exanthemata.

We didn't consider that it was anything particularly remarkable except that we did point out there was some obscuration in the cardiac silhouette, most probably by a pneumonia. The second examination showed some decrease in the patchy areas which we assumed was a response to the antibiotics.

In a recumbent film we weren't quite sure that this was a big heart. It might have been taken at a diastole, and we thought, well, the patient is improving and it may be top normal. However, on the third examination, we felt that there was definite evidence of a pericardial effusion.

With the marked enlargement of the cardiac silhouette and the incomplete resolution of the pneumonitis which obviously was not as acute as originally assumed, we felt that on the 18th that it was time now to start considering some of the more chronic pulmonary lesions.

No Significant Change

Then the progression throughout the remainder of the course shows no really significant change in these patchy areas throughout both lung fields or in the size of the cardiac silhouette. There is some suggestion of a miliary distribution of these lesions.

A sub-acute bacterial endocarditis throwing out multiple septic emboli would certainly fit this picture. In the back of our mind we always kept thinking about a miliary tuberculosis with a possible tuberculous pericarditis and tuberculous myocarditis.

The last picture that we see has these multiple areas of edema and we thought of an accompanying azotemia. So the picture that we see is a chronic pneumonitis, somewhat miliary, with accompanying pericardial effusion and possible myocarditis. We kept hammering on tuberculosis, but apparently the skin tests and gastric washings couldn't confirm this or the other fungus diseases.

Dr. F. P. Bornstein

In view of the emphasis that Dr. Verosky, in the interpretation of the electrocardiograms, put on cardiac hypertrophy, can you correlate the X-ray findings with this electrocardiographic interpretation?

Dr. Ravel

We considered a pericardial involvement rather than an actual ventricular or cardiac chamber enlargement. One of the reasons was the lateral view which did not give us the impression that this was a particularly large heart, either toward the sternum or posteriorly.

If you had any size ventricular enlargement we would expect maybe some displacement of the esophagus and we would expect some encroachment by the left ventricle posteriorly. Even on the oblique view I don't really think there is what I would call cardiac chamber enlargement.

Dr. Budwig

You have a nine-year-old girl, chronically ill, with a various number of symptoms and signs and the temptation here is, or the natural problem here in diagnosis, is whether you want to take each symptom and diagnose it separately or whether you want to take the whole shebang and put it under one name.

Many times it can be difficult to try and tie up many different organ syndromes and put them into one name. If we were to do it singly, we know this child has a heart lesion, that at one time was thought to be rheumatic fever.

She had a pneumonia, I think, that has progressed and she has some kidney findings. She has an elevated BVN and she had some albumin and some casts and white blood cells, and she had a transient glycosuria.

Diagnosis

My diagnosis is that this child had measles with a secondary pneumonia and that she had a periarteritis nodosa. This is not a common disease in children, but it does occur. I think you can wrap up most of the symptoms of periarteritis nodosa into one here except for possibly the pneumonia secondary to the measles, certainly the heart and kidneys.

You often see symptoms of nephritis, and as far as the transient glycosuria is concerned, although it is uncommon, occasionally there are lesions in the pancreas which may cause a transient glycosuria. This could all probably be explained on the basis of a sub-acute bacterial endocarditis also. With the negative blood cultures you kind of doubt it, although it still could be.

Another Point

Another point, in the kidneys, if you have severe tubular damage you can get a diabetes without any abnormality of the pancreas. I have one patient right now with a nephrosis who has been going along two years in terrible shape, had five courses of ACTH. He has a high blood sugar and 4+ sugar in his urine and acetone. However, I think this child's main pathology was a periarteritis nodosa.

Discussion — Dr. C. P. C. Logsdon

I don't recall when I first saw this child, but I think I was one of the first to see her and while she was not typically a rheumatic on the basis of her murmurs, she was even less typically anything else. She had a normal sedimentation rate. I didn't recall the first degree atrial block which Dr. Verosky pointed out; I thought that was normal, too.

Anyway, I finally decided she was probably an interim rheumatic who had suffered cardiac damage. The murmur that was not explained was not the apical murmur; the apical murmur was fairly typical of a mitral regurgitation.

Systolic Murmur

I don't recall her having an enlarged heart but there was a systolic murmur, a rather rough murmur, right along the left border of the sternum up toward the pulmonic area. On subsequent occasions she always looked chronically ill, pale, always pale, did not have an anemia, though, as I recall, and I regarded her as a rheumatic and didn't pay much attention to her.

One day Dr. Appel called me in and said we have no proof that this child is a rheumatic, so we went over everything again and I still had the impression that while she was not a typical rheumatic, that she was probably a rheumatic.

Final Impression

Dr. Appel subsequently went over her again, I think, and made a note that it was his final impression that she was a rheumatic, too, although there were some unexplained features. Then when I saw her again in the ward after she was definitely in heart failure, she had a gallop rhythm; I think at that stage of the game no child can ever be said to have typical findings of mitral stenosis.

Certainly these mid-diastolic murmurs can be caused by other things as well as the systolic murmurs but it seemed fairly characteristic of what we see in acutely edematous valve and what usually turns out to be a more or less acute mitral stenosis. It was my impression at that time that she had acute myocarditis.

I didn't pay too much attention to the pulmonary lesion because they are not too uncommon in children who are suffering from exacerbations of rheumatic fever. Then, on another occasion I saw her, sometime before she died. She seemed very much better.

Dr. Saul B. Appel

I don't remember seeing the child in the clinic. I think we should all keep an open mind about the etiology of any cardiac until we are absolutely sure what it is. In a child with these findings in the clinic I think it is a healthy attitude for us every now and then to say to ourselves, "is this really what we have been following it for?". Apparently in the end we decided the child did have a chronic rheumatic heart.

Dr. T. S. Martin

I would like to suggest disseminated lupus. I look favorably on that possibility because she had four or five episodes of pneumonia which is a common past history in lupus. In addition, she had a well developed set of murmurs that went away and then came back again, and she had a renal involvement with elevation of the urea nitrogen. I think very likely that the pulmonary findings with which she came into the hospital may have been due to lupus, although very possibly a yeast infection took over as the terminal pulmonary disease, and therefore little improvement occurred under the steroid therapy.

Dr. Thaddeus W. Cap, Lt. Col., MC, Chief of Pediatric Service, William Beaumont Army Hospital

This patient had had pneumonia four different times in her life and she had definite bilateral disease in the last illness. She was very much undernourished, and the possibility of cystic fibrosis of the pancreas should always be considered in such a patient. I cannot explain why she should have so much difficulty the first several years of her life and then go approximately six years without any recurrence of her pneumonic process.

It occurred to me as I looked at the X-rays that this could be a staphylococcus infection. These patients get little lung abscesses scattered in a miliary fashion throughout the lung. Her terminal course, I think, was probably a monilial infection.

I think this is not uncommon nowadays with the use of antibiotics. There is the possibility of a subacute bacterial endocarditis on the basis of a monilial infection. I think that in the final analysis, however, you keep going to one of the collagen diseases, and myself, I would lean a little more, as Dr. Martin does, toward a lupus rather than periarteritis nodosa.

Dr. Mervin H. Schwartz, Capt., MC, Asst. Chief
Chief of Pediatric Service, William Beaumont Army Hospital

In spite of the negative skin tests and the negative gastric washings, we could have a patient who had miliary tuberculosis and who had become anergic.

Dr. M. B. Cohen

I can't add much to so many learned discussions, steroids, deep discussions of electrocardiograms, and so forth. I do wonder though in a patient who has had repeated bouts of pulmonary difficulty whether it is pneumonia or otherwise; and where there is no way to make a diagnosis on the basis of the pictures here, whether or not a bronchoscopy might have been helpful.

Clinical Diagnosis: Rheumatic heart disease, chronic pneumonitis.

Dr. Budwig's Diagnosis: Periarteritis nodosa.

Pathological Diagnosis

1. Cardiac malformation with common truncus arteriosus (cor biatriatum triloculare).
2. Mitral insufficiency due ot rheumatic fever.

3. Bilateral pulmonary coccidioidomycosis with dissemination to kidneys, spleen and lymph nodes.

Pathological Discussion: Dr. Bornstein

On autopsy we found a nine-year-old emaciated girl. The left pleural cavity was obliterated by fibrous adhesions. The right pleural cavity contained about 100 cc. of cloudy fluid. The pericardial sac contained about 50 cc. of cloudy fluid. The heart weighed 360 grams which represents a good-sized adult heart and therefore a tremendous hypertrophy in a child nine-years-old.

The left ventricle measured eight, the right ventricle measured fifteen mm. in thickness which again represents a hypertrophy to adult size. The mitral valve measured eight cm. and was definitely incompetent, with thickening of the mitral valve leaflets. This is evidence of a preceding rheumatic heart disease and microscopic examination confirmed this finding. In addition, a rather unusual cardiac malformation was found.

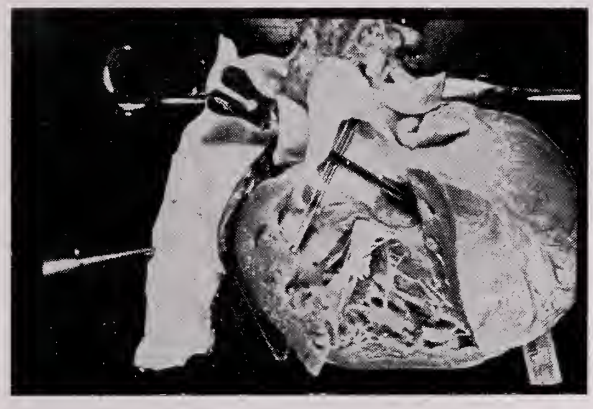


Figure 1

Protocol Quoted

To quote the autopsy protocol, it consisted of the following abnormalities: "There exists a riding common truncus arteriosus which arises from the right ventricle. Two coronary ostia arise in the aortic cusps. Somewhat higher up two pulmonary arteries branch off and then the artery becomes a normal aorta with its branches.

"The connection with the left ventricle is through an opening in the interventricular septum which connects with the left ventricle beneath the anterior leaflet of the mitral valve. The common aortic valve measures 6.5 cm. in greatest diameter and as mentioned above, has normal coronary ostia."

Two Blood Streams

This means that the blood flowing into the right ventricle would go from there through the small pulmonary arteries into the lungs or back into the aortic circulation. The blood from the lungs would go into the left ventricle and through the opening in the septum back into the right ventricle, this by necessity must produce a crossing-over of two blood streams (Fig. 1). It is very amazing that the child lived that long, with such a malformation.

It is well known that such malformed hearts are subject to super-imposed rheumatic infection as has happened in this case. In addition, there was severe passive hyperemia of the liver with foci of necrosis indicating that the child was in cardiac decompensation. The adrenal glands were atrophic, as is com-



Figure 2

monly the case after treatment with cortisone type preparations. The kidneys did not show any significant changes and we can assume that the glycosuria was also due to the cortisone preparations.

Lung Findings

The next important findings were in the lungs. The right lung weighed 500, the left 755 grams. Both lungs were extremely firm in consistency and studded with innumerable nodules. On sectioning, the entire tissue of the left lung was replaced by yellow, firm, consolidated tissue (Fig. 2). On microscopic examination a diffuse exudative pneumonic process was revealed and the alveoli contained innumerable typical organisms of coccidioidomycosis (Fig. 3). The skin test was negative in the face of such extensive infection because the infection was overwhelming and did not produce any granulomatous response except in a small area in the kidney.

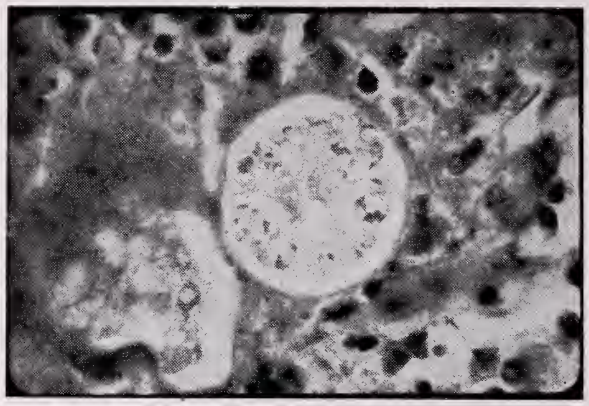


Figure 3

Summary

In summary, then, this represents a case of a child who was born with a cardiac malformation, upon which a rheumatic inflammation was superimposed.

Coincidental with this rheumatic infection was a pulmonary lesion which may or may not have been coccidioidomycosis at the outset. Cortisone treatment was used successfully to bring the rheumatic process under control. However, it was probably instrumental in promoting the widespread coccidioidomycotic pneumonitis.

Di-Phenthane-70 . . . . .

(Continued from Page 671)

ner as those having tapeworms. No benefit occurred in either case.

Summary

Twenty patients with diagnoses of tapeworm were treated with Di-Phenthane-70, a drug much used for this purpose in veterinary medicine. Of the 15 patients who took the full dose of the drug and had adequate follow-up, all had apparent cures. No toxicity was noted in any patient receiving the tablets.

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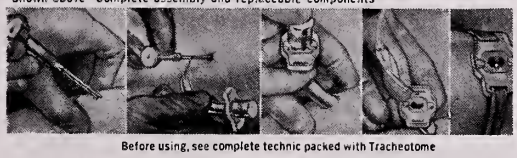
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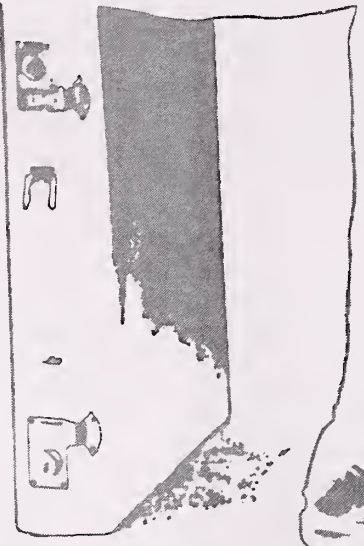
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1. Shea, J., et al.: Military Med. 119:221-227 (Oct.) 1956.

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3	60	Peptic ulcer and hiatal hernia	For sedation	50 mg., q6h, p.o.	13	Good response—no pains
4	45	Pancreatitis—Gastritis	Hyperactivity	50 mg., q6h, p.o.	7	Good response—pain diminished
				50 mg., q4h, I.M.	7	
7	40	Intracranial hemorrhage end M.S.	Pain in muscles	50 mg., q.i.d., p.o.	35	Good control of muscle pain
9	30	Ulcerative colitis	Pain from muscle and vomiting	100 mg., q6h, I.M.	36	Fair response
9	38	Sickle cell crisis Narcotic addict	Control pain	100 mg., q4h, p.o.	3	Good response
10	48	Rt. lower lobe pneumonia Chronic alcoholic	Control activity	100 mg., q6h, p.o.	12	Good response
11	44	Pneumonia	Vomiting and D.T.'s	50 mg., q6h, I.M.	6	Good response, immediate
			Abdominal pain		10	Good pain control
22	13	Uremia	Vomiting	25 mg., q6h	4	Vomiting controlled
23	57	Alcoholic (post)	D.T.'s and pain in chest	50 mg., q.i.d., I.M.	25	Controlled D.T.'s, pain relieved
23	42	Alcoholic (post)	Confused and disoriented	50 mg., q6h, p.o.	27	Fair control
25	71	HCVD—cerebral arteriosclerosis	Behavior problem	50 mg., t.i.d., p.o.	9	Good
25	47	Rheumatoid arthritis Acute excitation	Pain	50 mg., q6h, p.o. 50 mg., q6h, p.o.	3 5	Fair response
27	16	Stricture of esophagus Pregnancy—hypertension	Vomiting	50 mg., q6h, I.M. 25 mg., q6h, I.M.	2 3	Controlled vomiting
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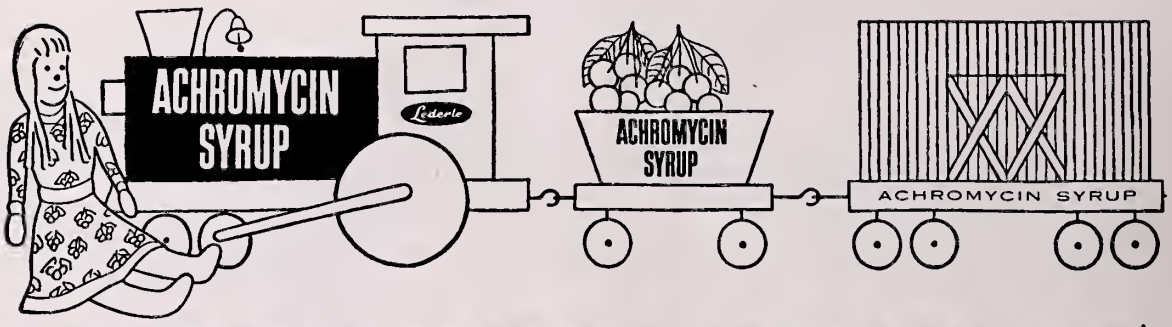
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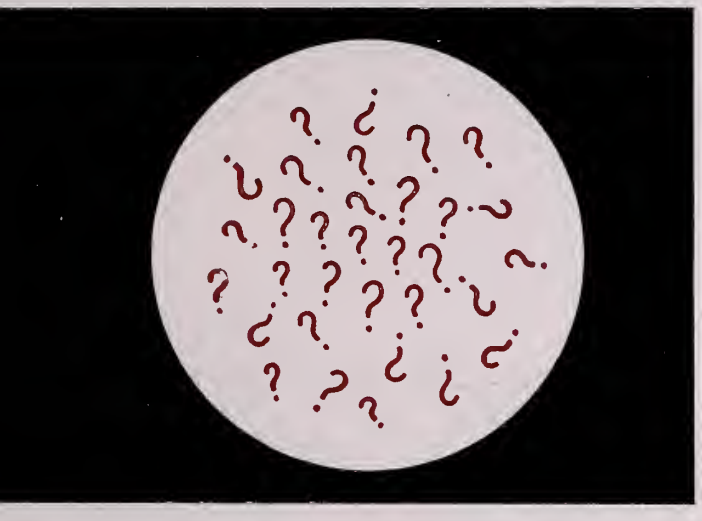
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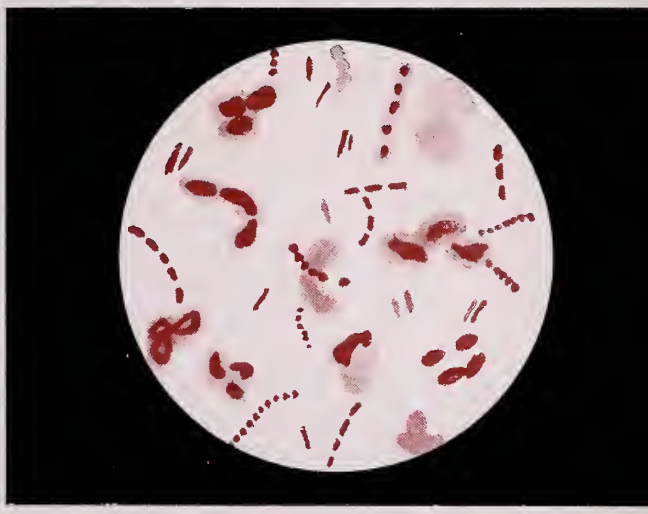
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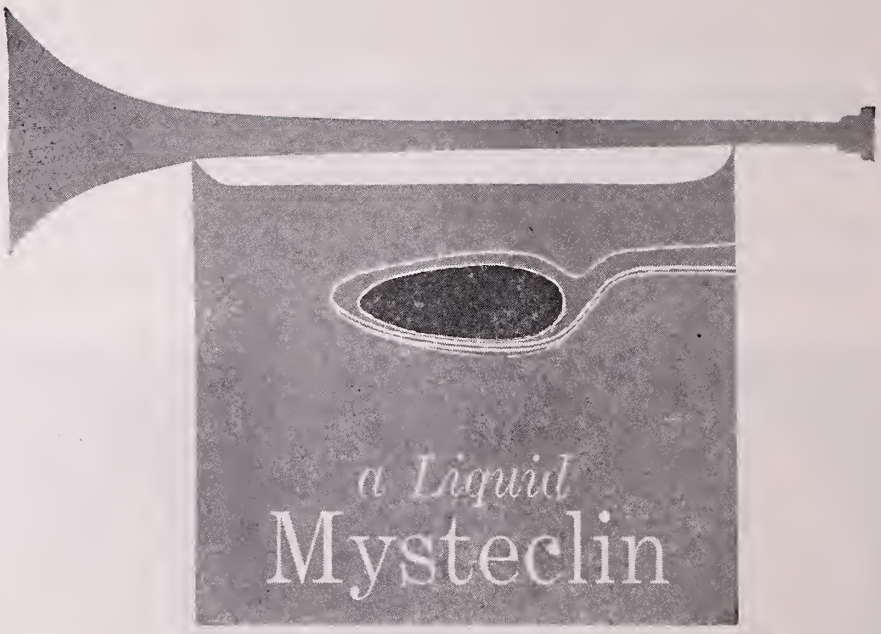
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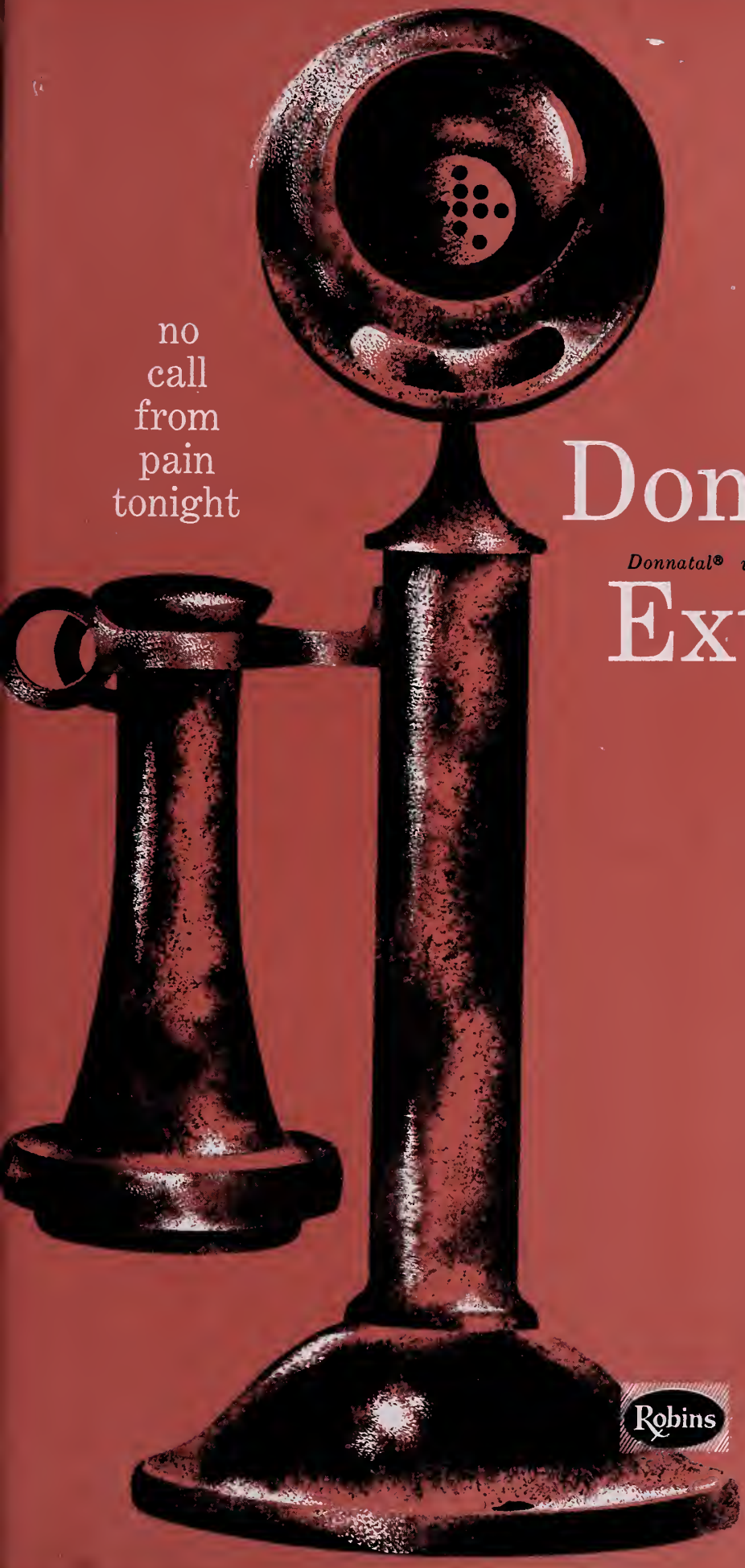
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Phenobarbital (¾ gr.)	48.6 mg.

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1. Goodman, L. S., and Gilman, A.: The Pharmacologic Basis of Therapeutics, N. Y., The Macmillan Co., 1955; p. 127

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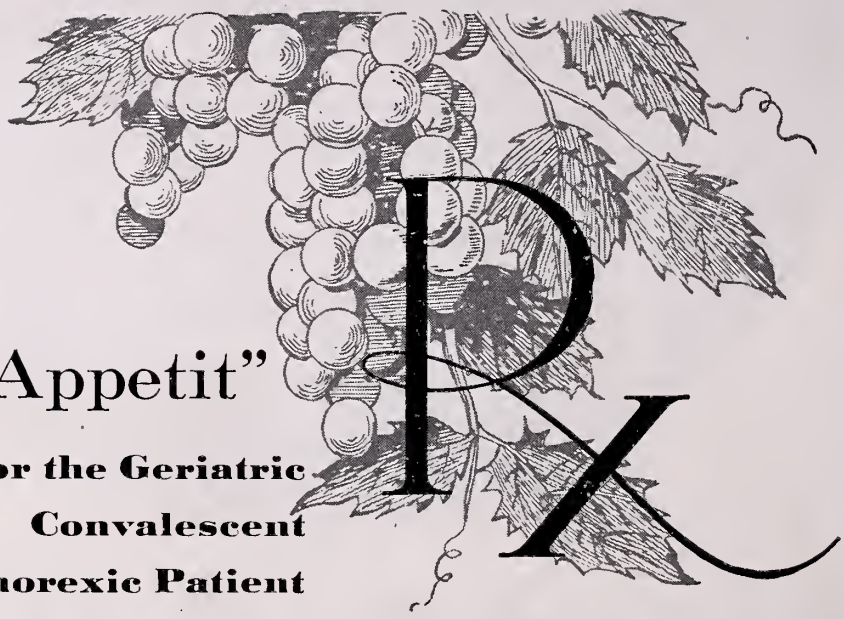
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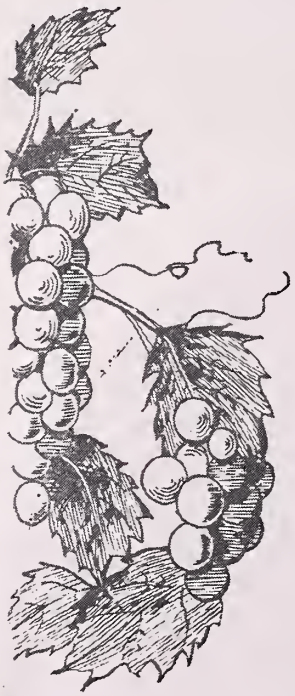
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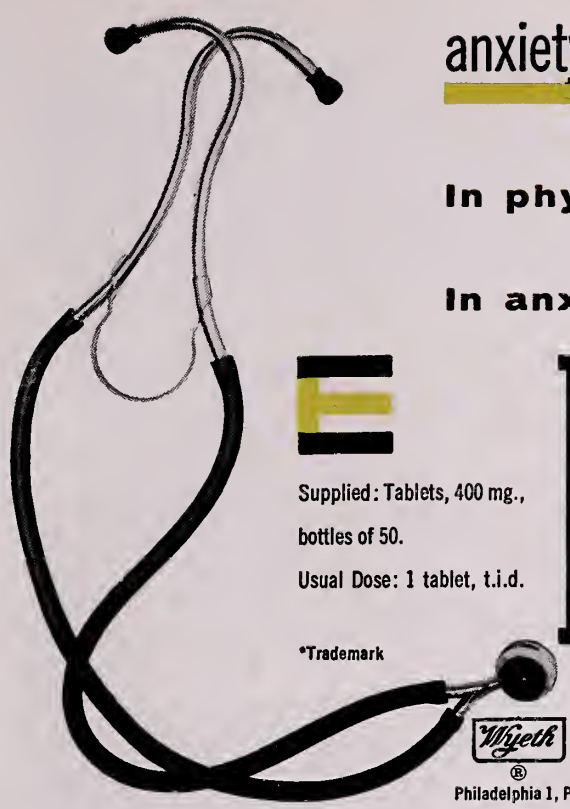


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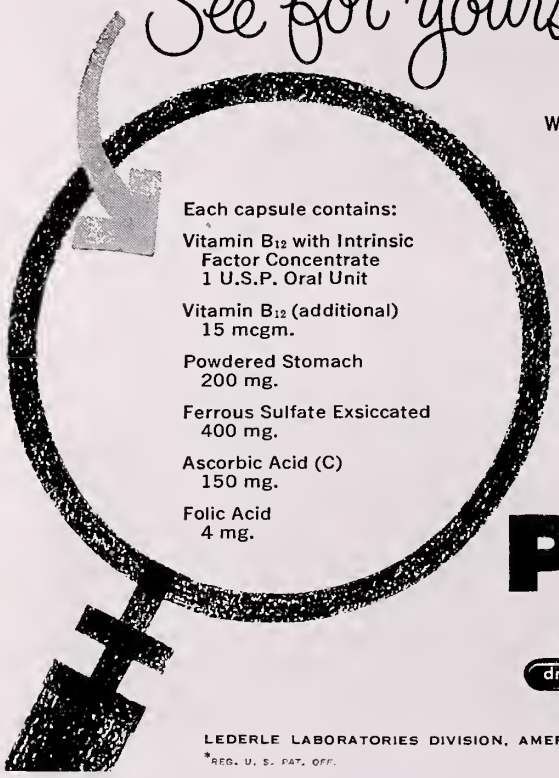
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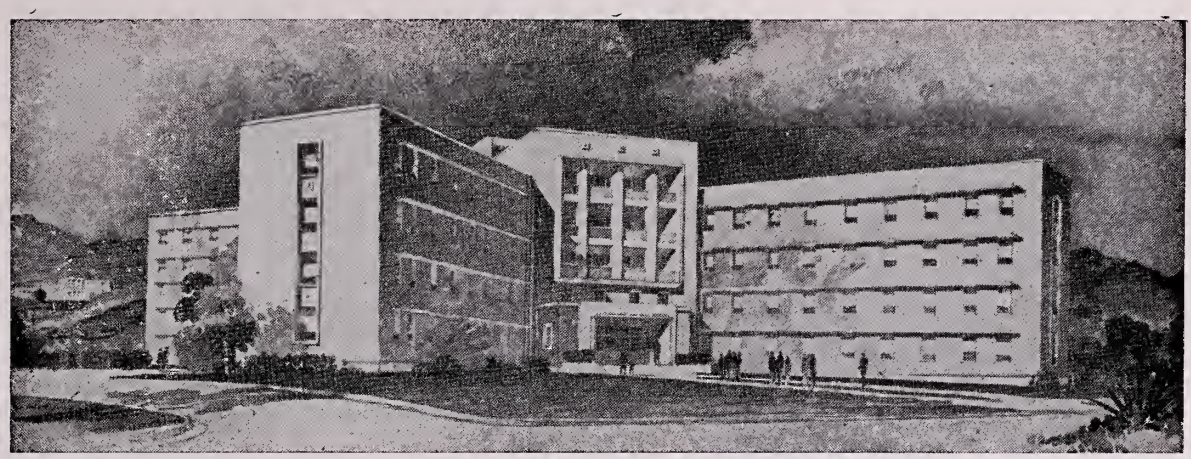
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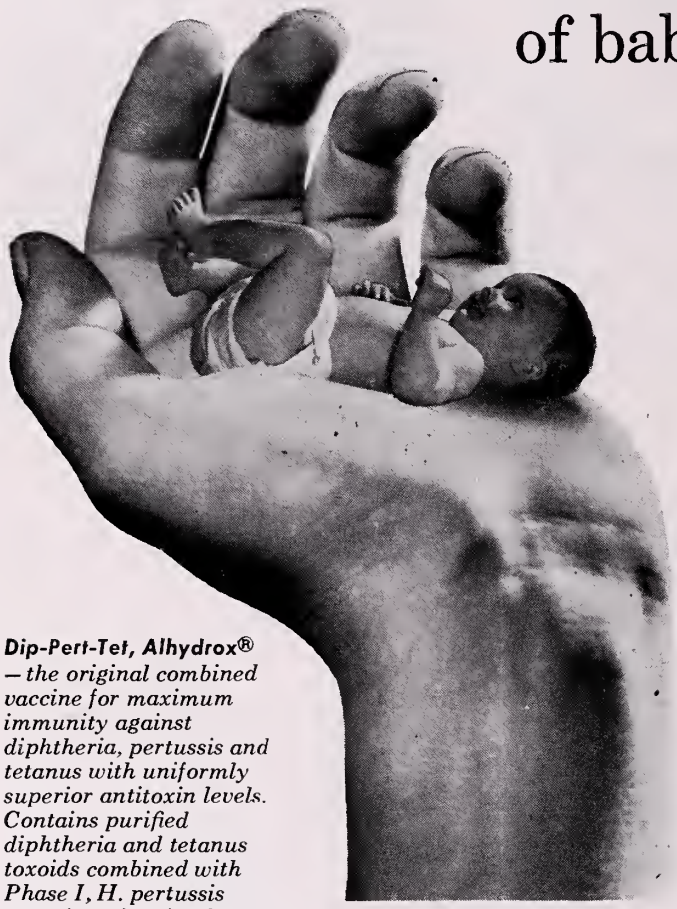
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EDITORIAL

Tuberculosis Conquered?

By Robert B. Homan, Jr., M. D., El Paso

It appears evident that many laymen and some doctors are of the opinion that we have practically eliminated tuberculosis as a cause of death and as a health menace. The facts do not uphold such a conclusion. The improvement in our "control" of tuberculosis in the past decade is, of course, astounding, but there is every evidence that we have a long way to go.

The advent of antimicrobial therapy, about ten years ago, has been an outstanding victory in a continuous war on tuberculosis. Used alone, expertly handled drug therapy is undoubtedly capable of curing many early cases, of preventing the development of many of the serious forms of the disease such as tuberculosis meningitis and upon cavitary tuberculosis. Beyond doubt, chemotherapy has opened the thorax to the surgeon, and extirpation therapy of certain tuberculosis lesions has thus been made possible.

All Not Serene

However, Waring[1] has pointed out that all it not sweet and serene in this "chemotherapeutic era". — "If the drugs are most effectively used, cures will be increased, early and minimal disease will be cured before it becomes advanced disease, relapses will be infrequent, the number of infectors will shrink, and, consequently and coincidentally, the number of infected, the chief feeder of the "pool of communicability", will decrease. On the contrary, if the new drugs are not expertly handled, lives will be saved, but not so many, incomplete cures will be frequent, chronic disease due to "resistant" bacilli will be common, relapses will be frequent, and the "pool of communicability" may overflow! As Perkins[2] puts it: "Has death from tuberculosis merely been postponed, not prevented, for a number of patients?"

Perkins[3] also suggests that the present wide knowledge of treatment advances might tempt patients and their families to "downgrade" the seriousness of the disease, and that many patients dangerously consider home care with drugs an adequate substitute for hospitalization, bedrest and adequate medical supervision.

Statistics Enlightening

National Tuberculosis Association statistics for 1955 are enlightening. There were 16,000 tuberculous deaths in the U. S. last year (a death every 30 minutes), 80,000 new cases were reported, there are 1,200,000 cases — 400,000 active, of which 250,000 are not under treatment and are exposing others in the community. The U. S. Public Health Service found that in representative areas studied, 45 per cent of the significant TB cases were not hospitalized, and, of these, 87 per cent were in advanced stages and 40 per cent of the active cases had had neither drugs nor bedrest recommended!

Tuberculosis is a tragic socio-economic catastrophe to the victim, to his family and to his community. Lacking a preventive vaccine, our approach to TB control must remain as outlined by the National Tuberculosis Association: research, education of the public and the profession, case finding through tuberculin testing, and x-ray surveys, follow-up of contacts, isolation of infectors and intensive therapy. Buy Christmas Seals!

References

1. Waring, James J.: Impact of Modern Therapy on Tuberculosis, J. A. M. A. Vol. 161, No. 14, Aug. 4, 1956.
2. Perkins, J. E.: Annual Report, N. T. A., 1954-1955, New York, National Tuberculosis Association, 1955.
3. Perkins, J. E.: Annual Report, N. T. A., 1955-1956, New York, National Tuberculosis Association, 1956.

ANTICONVULSANTS

The Use Of Phenurone In The Treatment Of Epilepsy

Livingston, S., & Kajdi, L., J. Pediat. 36:159, 1950

Phenurone was employed in treatment of 104 epileptics of whom 43 per cent were completely controlled or greatly improved. Untoward reactions occurred in 27 per cent of patients receiving this compound.

CURRENT THERAPY

Why Cobalt^{60}?

By Vincent M. Ravel, M. D.,* and Charles C. McVaugh, M. D.,** El Paso†

Radioactive Cobalt^{60} is being used increasingly for two reasons. The first is that it offers an energy range of gamma rays equivalent to a million volt supervoltage machine. One of the main advantages of supervoltage therapy is the minimal skin changes with the increased depth dose to the lesion. The second reason, from the practical standpoint, is the fact that the price of this material and the machine used with it, is far more economical and within the range of many institutions heretofore unable to afford the more costly supervoltage apparatus.

Ever since the discovery of radioactivity by Henri Bequerel, and X-Rays by Roentgen, application of these modalities to the practice of medicine has fascinated not only the physician, but also the public.

The attention of the physicists to the study of radioactivity soon revealed the effects of radioactivity were dependent upon two forms of energy. Both of these forms of energy, (a) corpuscular (alpha rays, electron beams, neutron beams, etc.) and (b) electromagnetic (X-Rays and gamma rays), have practical applications in medicine, but it is with the electromagnetic form that the radio-therapist is primarily concerned in use of teletherapeutic devices involving Cobalt^{60}.

The understanding of two aspects or radioactive materials are of prime importance in considering the therapeutic properties. These are measurements of quantity and quality of the energies involved. The unit of quantity accepted is the Curie. The Curie represents an amount of radioactive material that will produce 37.1×10^9 atomic disintegrations per second. This definition is based on the total disintegrations occuring when radon is in equilibrium with one gram of radium. A millicurie would then be 1/1000 of a curie or 37.0×10^6 atomic disintegrations per second. A microcurie is then 1/1000 of a millicurie or 37.1×10^3 atomic disintegrations per second. Recent evidence now suggests that the number may be a little high, but since this quantity is generally accepted, it is satisfactory for this presentation.

In Terms of Voltage

One of the methods of designating the quality of a beam of radiation, whether it be corpuscular or electro-magnetic, is in terms of voltage. Thus a beam of electrons may be stated to have an energy of one million electron volts (mev). The electro-magnetic radiations (i. e. gamma or X-Rays) among others are described in voltage equivalents. In other words, if an X-Ray beam is produced by a voltage of 100,000 volts (100 kv), we say the peak energies are equivalent to 100 kv X-Rays. If these rays are produced by million volt energies, they are described as being equivalent to one million electron volt X-Rays (mev). The measurements of radiation, given us by the physicists for natural or artificial radiation, range in energy from .015 mev to 3.2 mev for beta rays, and .029 mev to 5.78 mev for gamma rays. Cobalt^{60} has two gamma ray energy levels of 1.1 mev and 1.3 mev.

One other term frequently used is "half life". By "half life" is meant the time required for a radioactive material to decrease its quantity by one half. For radium it is approximately 1600 years. For Uranium 238, it is 4,500 million years and for Cobalt^{60} 5.6 years.

The biologic action of radiation is to produce death or damage to the cells by means of ionization. The ionizing radiations are applied to the cells in an effort to produce death of the cells. It has been noted that actively growing cells are more susceptible to radiation effects than quiescent cells. The degree of susceptibility of cancerous cells to radiation may be greater than normal tissues, since many neoplastic cells are actively growing. This then, forms the foundation of radiation therapy of malignancies.

Gamut of Energies

The gamut of energies used by radiologists in treating lesions ranges from soft "Grenz" rays (10-20kv), through superficial (25-120kv), intermediate (130-160 kv), deep (180-400 kv), supervoltage (800-3,000 kv), to finally mega voltage (above 3,000 kv).

One of the most important limiting facts in radiation therapy has been the effect of radiation on the skin. It was soon noted that the greater the energy of the radiation, the less skin damage was reported. The fact that vast sums of money were and are being spent to use higher and higher energies for irradiating malignant lesions, attests to the importance radiotherapists place on this aspect. Using multiple fields to irra-

* Director of Department of Radiology, Providence Memorial Hospital, El Paso

**Associate Director of Department of Radiology, Providence Memorial Hospital

†Drs. Ravel and McVaugh this month are substituting for Dr. Jack A. Bernard, regular conductor of this section.

diate lesions and thus spread the skin effects was another method of attack. Fractionating the exposures, thus allowing the skin to partially recover from the radiation effects, is a valuable method of decreasing the ultimate skin effects. The use of filters in front of the X-Ray tube and lead sieves on the patient, further aided in the protection of the skin. More recently, *rotational* therapy, where either the source of radiation or the patient was rotated, to spread the skin dosage even further is being practiced.

When Cobalt^{60} disintegrates, it emits gamma rays of 1.1 and 1.3 million electron volts, equivalent. It has a half life of 5.6 years and is relatively inexpensive. By combining a beam of energy in the million volt range economically, it presents an excellent practical method radiotherapists have been seeking in their attack on malignancies. It is no cure all. Estimates of its effectiveness show a 10% to 13% increase in five year survival in inoperable cases. It might be pointed out that to one of the fortunate 10%, it represents 100%.

Cobalt^{60} is not revolutionary. Certainly it presents no more than an improvement and extension of present techniques. It is a practical method of economically extending our efforts.

DERMATOLOGY

Sandpaper-Abrasion Treatment Of Tattoos

Strakosch, E. A., A. M. A. Arch. Dermat. & Syphilol. 67:53, 1953

Removal of accidental tattoo by means of sandpaper abrasion has been reported*. The method has since been employed in removal of tattoo designs from the forearm. The area to be treated was surgically prepared and anesthetized with solution procaine with epinephrine. Abrasion was accomplished with autoclaved sandpaper (grit No. 2/0 and 3/0), using a circular motion, starting from the center and working outward. Bleeding was controlled by washing the area with a saline solution containing epinephrine. After all tattoo marks had been removed, the wound was dressed with an aureomycin gauze pressure bandage which was allowed to remain in place for 10 days. Cosmetic results were excellent.

*Clinical Clippings, July, 1952
Clinical Clippings, June, 1953.

ANTIHISTAMINICS

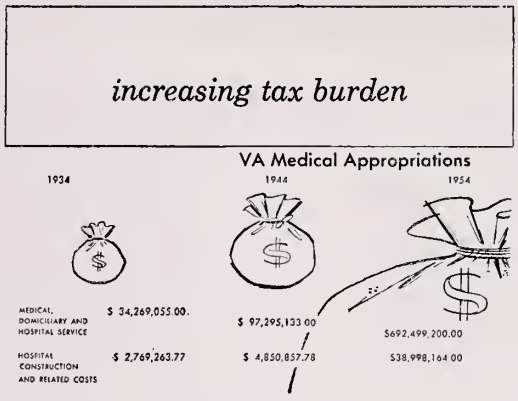
A Clinical Evaluation of Chlorcyclizine (Perazil)

Brown, E. A., et al., Ann. Allergy 8:32, 1950

Although the conclusion is reached that Perazil* is probably the most effective antihistaminic yet employed by the six investigators, the statement is made that had each reported separately, their conclusions would have been as varied as those reached by other authors concerning the effectiveness of numerous similar compounds.

*Supplied for this study by Burroughs Wellcome Co.

In Viewing the VA Medical Program . . .



In twenty years, the cost of the VA medical program to U. S. taxpayers has increased 1,875%. Yet only 15% of the patients treated in VA hospitals are veterans with disabilities incurred while in uniform. The VA medical program is now second in size and expense only to the nation-wide system of socialized medicine in Great Britain.

Aggressive Nurse Recruitment Pays Off For Hotel Dieu

The value of an aggressive nurse recruitment program was illustrated this year by Hotel Dieu's School of Nursing at El Paso, which currently has one of its largest classes in comparison to relatively small classes enrolled in recent years.

The recruitment program included trips to schools in the surrounding area; the mailing of personal letters with brochures; talks to appropriate groups; a press, television and radio campaign; and such other promotional efforts as a float in the Southwestern Sun Carnival in El Paso, an enchilada supper, and window displays featuring hospital week and career days.

A total of 217 inquiries resulted from this program. Of this number 77 girls were tested and 54 were able to pass the entrance test. Of this group 39 completed their applications and 38 girls entered training on September 5, 1956.

The Hospital's recruitment program also emphasizes that young men are invited to apply and points out that an R. N. degree is a qualification for officer rank in the Army of the United States, that male nurses are essential and helpful in the management of both hospital and office work and that a nursing career offers an excellent future to the properly qualified young man.

MEETINGS

Southwestern Medical Association Elects Dr. Celso C. Stapp President

Dr. Celso C. Stapp of El Paso was elected president of the Southwestern Medical Association at its annual conference which was held in Albuquerque in late October. Dr. Stapp succeeds Dr. John H. Dettweiler of Albuquerque.

The association voted to hold its 1957 convention in El Paso.

Other officers elected were Dr. Louis G. Jekel, Phoenix, president elect; Dr. W. J. Hossley, Jr., Deming, vice president; Dr. Russell L. Deter, El Paso, secretary-treasurer.

Named to the executive committee were Dr. Hollis H. Brainard, Tucson; Dr. A. R. Clauser, Albuquerque; and Dr. A. G. Herrera, Chihuahua City.



Dr. Celso C. Stapp

Dr. Stapp was born in 1913 in Bahia, Brazil, where his parents were Baptist missionaries. He received his primary education from his parents and in 1927 returned to the United States. He attended high school in Waco and Fort Worth and San Marcos Academy in San Marcos, Texas.

Dr. Stapp took his premedical work and received his medical degree at Baylor University. He then interned at Methodist Hospital in Fort Worth and served his residency at Baptist Hospital in New Orleans.

After completion of his residency in 1940 he went into the Army as a first lieutenant, served five and one-half years and was discharged as a colonel. He is now a colonel in the Air Force reserve.

He came to El Paso and entered private practice specializing in obstetrics and gynecology immediately following the war.

Dr. Stapp is a member of the American College of Obstetricians and Gynecologists. He is past president of the Southwest Obstetrical and Gynecological Society and a member of the Texas Obstetrical and Gynecological Society.

In 1940 Dr. Stapp married the former Day Davis of Hattiesburg, Miss. Dr. and Mrs. Stapp now live in the Country Club district. They have three children, Carl 12, a pupil at Mesita School; Mary Louise, 9, a pupil at Radford School for Girls, and Margaret Lois, 5.

Dr. Stapp has a brother, Lieut. Col. John Paul Stapp, now stationed at Holloman Air Development Center at Alamogordo, who recently achieved renown when he rode a rocket-driven sled to a speed of 642 miles per hour. The sled was then brought to a complete stop in less than a second. The entire operation was conducted as part of U. S. Air Force research into the effects of extreme deceleration on the human body.

The 1956 Southwestern Medical Association meeting was preceded by a regional meeting of the American College of Physicians in New Mexico. The Veterans' Administration Hospital in Albuquerque was site for this one-day session. Dr. Robert Friedenburg of Albuquerque is governor of the college for New Mexico.

The Southwestern Dermatological Society held its meeting in conjunction with that of the Southwestern Medical Association in the new Bernalillo County Indian Hospital.

Special Photo Report on

Southwestern Medical Association Meeting

Albuquerque, New Mexico, October 17 to 19



Officers at the Southwestern Medical Association meeting are Dr. Celso C. Stapp, El Paso, president (second from left); Dr. Louis G. Jekel, Phoenix, president-elect (right); Dr. Russell L. Deter, El Paso, secretary-treasurer (left); and Dr. John H. Dettweiler, Albuquerque, retiring president. Not present for the photograph was Dr. W. J. Hossley, Jr., Deming, N. M., vice-president. Drs. Hollis H. Brainard, Tucson, A. R. Clauser, Albuquerque, and A. G. Herrera, Chihuahua City, were named to the executive committee.



Shown at the regional meeting of the American College of Physicians held in conjunction with the Southwestern Medical Association in Albuquerque are (left to right) Dr. Robert Friedenberg, Governor of the College for New Mexico and President of the Bernalillo County Medical Society, Dr. T. L. Carr, Albuquerque, program chairman, and Dr. William B. Bean, Professor of Medicine and Head of the Department of Internal Medicine at the State University of Iowa College of Medicine. Dr. Bean was a guest speaker at both the Southwestern and the ACP meetings.



Left to right at the American College of Physicians banquet are Dr. C. R. Beeson, Albuquerque, Dr. W. S. Taylor, Chief of Medical Service at the Veterans Administration Hospital in Albuquerque, Mrs. John Abraums, Albuquerque, Dr. L. Levin, Belen, N. M., Dr. O. S. Cramer and Dr. A. L. Frankel, both of Albuquerque



Also at the ACP banquet are (left to right) Capt. Morris M. Goldberg, Lt. David Bristow, Capt. William Breal, and Lt. Col. John Bradley, Chief of the Medical Service, all of the Sandia Base Hospital.



Left to right are Dr. C. F. Kemper, Denver, Governor of the American College of Physicians for Colorado, his wife, R. O. Claypoole of Philadelphia, a representative of the American College of Physicians, and Dr. and Mrs. C. M. Kemper of Albuquerque. The Drs. Kemper are uncle and nephew.



Left to right are Major D. W. Merkle of Sandia Base Hospital, Dr. and Mrs. H. B. Woodward of Albuquerque, Mrs. Donald Huelsmann and Dr. Huelsmann of Albuquerque, and Dr. and Mrs. George M. Boyden of Albuquerque.



Left to right are Dr. Murray Friedman of Santa Fe, Dr. Fred Hanold, Albuquerque, and Dr. Pierre Salmon, Roswell.



Left to right are Dr. H. O. Lehman, Portales, Dr. Herman Rice, El Paso, and Dr. J. E. Keppel, Mesa, Ariz.



Left to right are Dr. G. W. Horst, Grants, Dr. Basil L. Wang, Grants, and Dr. Thomas L. Carr, Albuquerque.



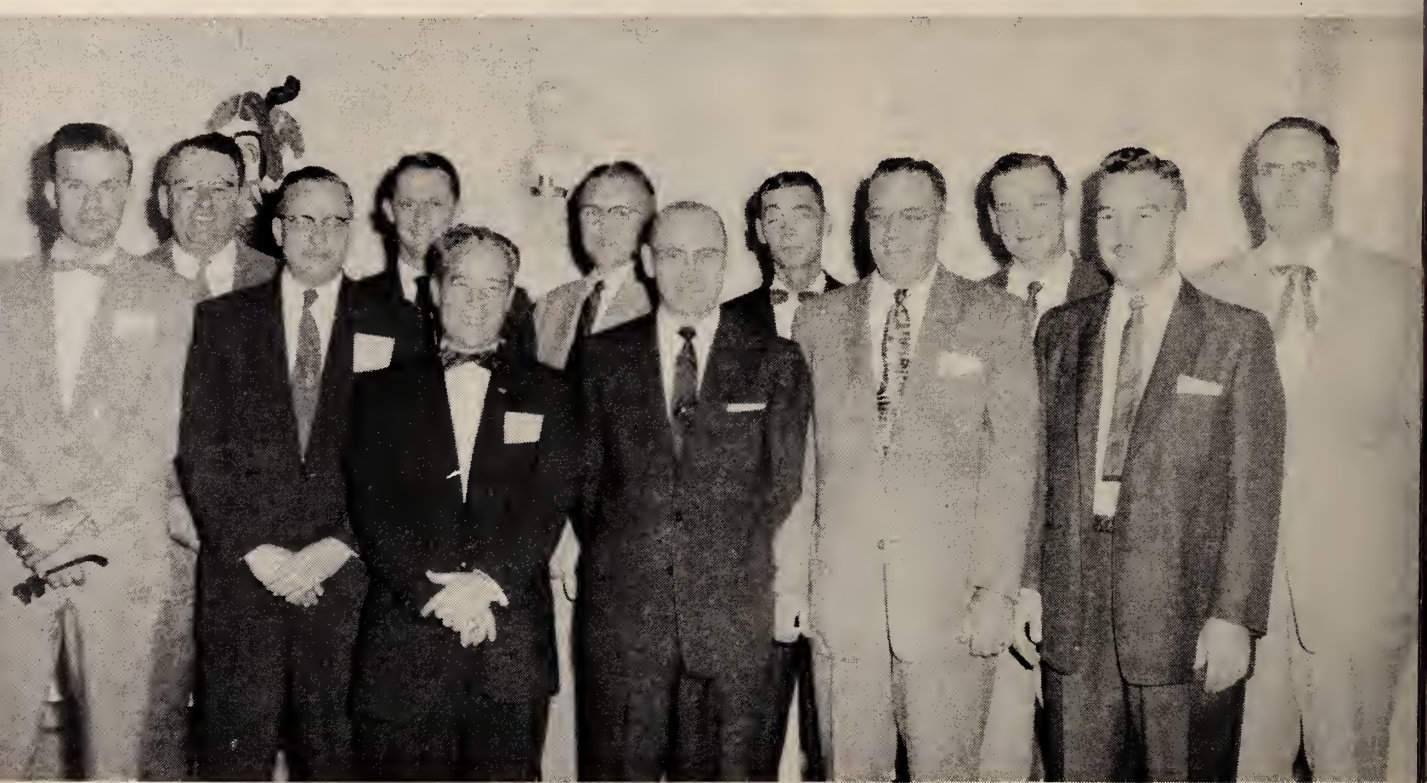
Left to right are Dr. H. E. Kosanke, Tucson, Dr. R. G. Austin, Tucson, Dr. Lopez Garduno, Albuquerque, and Dr. A. G. Prieto, Albuquerque.



Left to right are Dr. Joseph H. Sharpe, Albuquerque, Dr. J. A. Rivas, Belen, Dr. W. W. Kridelbaugh, Albuquerque, Dr. Colin G. Thomas, Jr., Associate Professor of Surgery at the University of North Carolina School of Medicine and one of the guest speakers, Dr. John A. Craig, Albuquerque, Dr. Galen M. Tice, Professor of Radiology and Head of the Department of Radiology at the University of Kansas School of Medicine and one of the guest speakers, and Dr. Wallace E. Nissen, Albuquerque, chairman of the program committee.



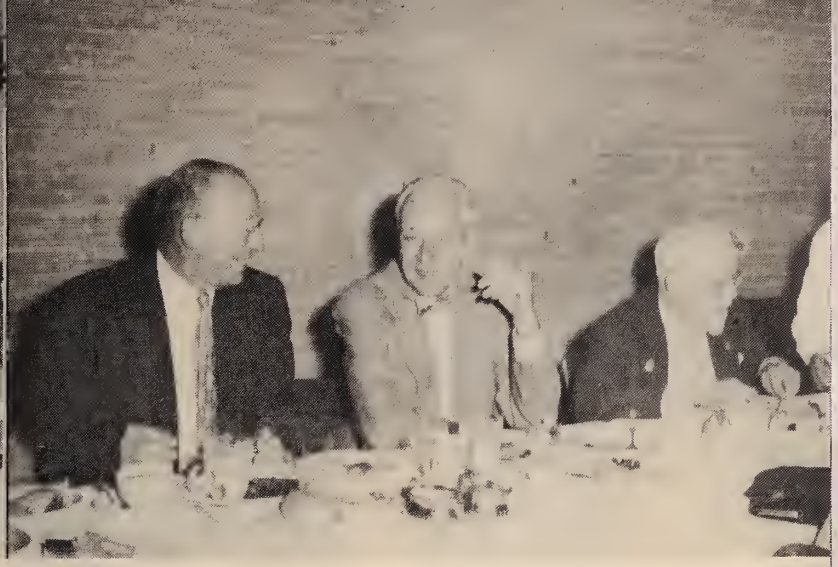
Left to right, front row, among exhibitors at the convention are Robert Lantz, Denver, J. B. Roerig and Co., Wayne H. Hales, Denver, Searle, Jack Harless, N. M. Pharmacal Co., Albuquerque, Mrs. Beverly Collier, Albuquerque, Dairy Council, Warner Jones, Albuquerque, U. S. Vitamin Corp., Chet Corn, Albuquerque, Southwestern Surgical Supply Co., Harry Fogelson, Los Angeles, Milex. Back row, left to right, Henry Cook, Albuquerque, FIF Management Corp., Frank Kleinschmidt, Albuquerque, New Mexico Pharmacal Co., Harry Watts, Albuquerque, New Mexico Pharmacal Co., Sonny Wright, Squibb, R. L. Hyer, El Paso, Winthrop Laboratories, Stuart Hutson, El Paso, Southwestern Surgical Supply Co., Kenneth Olds, Credit Bureau of Albuquerque, and Bob Sasser, Albuquerque, FIF.



Also among exhibitors at the convention were, left to right, front row, Tom McLaughlin, Albuquerque, Eaton Laboratories, Harold E. Marple, Norwich, N. Y., Eaton; Don Ripley, Denver, Winthrop Laboratories, Glenn C. Lycan, Santa Fe, Eli Lilly and Co., Seth Hoffman, Albuquerque, Parke, Davis and Co., Lyle K. Bartlett, Midland, Lederle Laboratories. Back row, left to right, William C. Nelson, Dallas, Eaton Laboratories, George Howell, El Paso, Mead Johnson and Co., Keith Milheim, Denver, Parke, Davis and Co., Leon Mhoon, Albuquerque, Sharpe and Dohme, Chet Cardell, Albuquerque, Allied Medical Supply, C. S. Serns, Albuquerque, Lederle.



Left to right, at a pediatrician's dinner during the convention are Dr. Louis Kuehn, Albuquerque, and Dr. and Mrs. Ira Budwig of El Paso.



Left to right are Dr. Albert S. Lathrop, Santa Fe, Dr. John A. Bigler, Professor of Pediatrics and Head of the Department of Pediatrics at Northwestern University School of Medicine and guest speaker, and Dr. M. K. Wylder, Albuquerque.



Left to right are Dr. Howard McMurray, Chairman of the Department of Government at the University of New Mexico, Mrs. R. A. Trombley, Albuquerque, Dr. Alvina Looram of Santa Fe, maternal and child health director for New Mexico.



Left to right are Mrs. Louis Kuehn, Albuquerque, and Dr. R. A. Trombley, Albuquerque.



Left to right are Dr. Bryan Moynahan, Santa Fe, and Dr. Marcus Smith. Santa Fe.



Dr. Robert H. Barter, (standing) Associate Professor of Obstetrics and Gynecology at the George Washington University School of Medicine and one of the guest speakers, indulges in a little humor at a dinner given in his honor at the Albuquerque Country Club.

ALBUQUERQUE AUXILIARY

Presents

FASHION PAGEANT



Mary Gordon of TWA and
Mrs. W. E. Nissen

A feature of the convention was the TWA fashion pageant presented by the Bernalillo County Auxiliary for wives of physicians attending the Southwestern Medical Association meeting. Auxiliary members donned a variety of styles dating back to the early twenties. Wardrobe items were flown from Los Angeles by TWA and presented under the direction of Mary Gordon of Los Angeles, TWA Travel Advisor, who did the narration. Mrs. Wallace E. Nissen was in charge. In photographs on this page are several of the models and those also participating include Mrs. Wesley Connor, Mrs. Donald Huelsman, Mrs. James T. McGuckin, Mrs. Donald M. Olson, Mrs. Sydney Schultz, Mrs. Donald M. Simms, Mrs. Donald B. Stewart, Mrs. Robert A. Trombley, Mrs. J. W. Wiggins and Mrs. L. H Wilkinson.



Mrs. John H. Dettweiler



Mrs. Oscar Syme



Mrs. H. V. Beighley



Mrs. L. C. Delambre



Mrs. George Chaney



Participating in the convention as exhibitors were, left to right, C. C. Carter, Albuquerque, General Electric Corp., Fred Wiley, El Paso, U. S. Vitamin Corp., Buddy Doak, Santa Fe, Merck, Sharpe and Dohme, Fred Housen, Albuquerque, A. H. Robins Co., and Red Moore, El Paso, General Electric Corp.



Among convention exhibitors were, left to right, front row, Stan Kasprzycki, Los Angeles, Desitin Chemical Co., Gene Elliott, Albuquerque, Pet Milk Co., Dennis Morrow, Albuquerque, International Business Machines, D. E. Whitlock, Albuquerque, N. M. Chemical and Surgical Co., Larry Walrath, Monte Vista, Colo., Eli Lilly and Co. Back row, left to right, Bob Wyche, Lubbock, Lloyd Brothers, W. L. La Fortune, Albuquerque, Upjohn Co., Bev. Clark, Albuquerque, Abbott Laboratories, Charles Singletary, Albuquerque, N. M. Chemical and Surgical Co., and Doug Spencer, Albuquerque, Ciba Pharmaceutical Products.

SOUTHWESTERN DERMATOLOGICAL SOCIETY MEETING IN ALBUQUERQUE, OCTOBER 20

At the annual meeting of the Southwestern Dermatological Society in Albuquerque, October 20, 1956, Dr. George K. Rogers of Phoenix was elected president of the Society. Other new officers are Dr. Kenneth C. Baker, Tucson, Vice-President, and Dr. H. D. Garrett, El Paso, Secretary-Treasurer.

The meeting was held in the Bernalillo County-Indian Hospital in Albuquerque following close of the annual Southwestern Medical Association convention. The Bernalillo County-Indian Hospital has 240 beds and has been open for two years.

Guest speaker was Dr. Stephen Rothman, Professor of Dermatology and head of the Department of Dermatology at the University of Chicago School of Medicine. Dr. Rothman's subject was "The Acne Problem."

Clinical cases were presented by Dr. George A. Waldriff, Albuquerque, Dr. John Murphy, Albuquerque, Dr. John J. Corcoran, Albuquerque, Dr. Earl Pace, Santa Fe, and Dr. Samuel J. Jelso, Albuquerque, retiring president of the Society.

The next annual meeting of the Society will be held in El Paso, the date to be announced.



Left to right at the Southwestern Dermatological Society Meeting are Dr. John C. Murphy, Albuquerque, Dr. Carl Kaufman, Albuquerque, standing, Dr. George Waldriff, Albuquerque, Dr. Louis Jekel, Phoenix, standing, Dr. Stephen Rothman, Chicago, Dr. Leslie M. Smith, El Paso, Dr. Kenneth C. Baker, Tucson, Dr. Earle R. Pace, Santa Fe, Dr. H. D. Garrett, El Paso, Dr. J. B. Robbins, El Paso, Dr. Samuel Jelso, Albuquerque, Dr. Wm. E. Ragsdale, Phoenix, Dr. Robert H. Snapp, Phoenix, standing, Dr. Otis B. Miller, Tucson, Dr. John J. Corcoran, Albuquerque, Dr. Donald McNairy, Phoenix, and Dr. Seymour Shapiro, Tucson.

Bernalillo County-Indian Hospital



President of A. M. A. Speaks to Railway Surgeons in El Paso

A feature of the 53rd annual meeting of the Western Association of Railway Surgeons in El Paso, Texas, Oct. 24-26, was a speech entitled "Two Big Jobs for Railway Surgeons" by Dr. Dwight H. Murray, Napa, Calif., President of the American Medical Association.

New officers of the Association are Dr. Glenn F. Cushman, San Francisco, president; Dr. Bernard E. McConville, Seattle, first vice-president; Dr. John R. Winston, Temple, Texas, second vice-president; Dr. Harry O. Hund, San Rafael, Calif., treasurer; Dr. Graham Owens, Kansas City, secretary. Dr. E. W. Rheinheimer of El Paso was the retiring president.

Full Text

The full text of Dr. Murray's speech follows:

With the development of effective industrial hygiene and safety programs, industry's attention has turned to the prevention of personal illness.

The emphasis, therefore, must be on keeping workers well so they can do their jobs and keep the family income flowing steadily. Although the primary personal responsibility for the maintenance of health is the individual worker's, the employer and the physician can help him.

There is a wave of new interest in preventive medicine on the part of the public. Hundreds of thousands of children and young adults have been, and are being, inoculated, with the Salk anti-polio vaccine. Hundreds of thousands of persons annually receive chest X-rays, and more and more persons are getting early examinations for cancer and heart disease.

Annual Examination

Magazine and newspaper stories also are emphasizing the annual physical examination, and most doctors already can attest to the increased number of patients who desire a complete checkup.

The control of infectious diseases — smallpox, tuberculosis, malaria, yellow fever, diphtheria and pneumonia — and modern sanitary measures have given the American people longer life and more years for active work. Usually, the individual has benefited from these preventive measures without actually taking any direct effort on his part.

But now Americans apparently have realized that they, too, can do much to keep themselves healthy. Witness the phenomenal interest in overweight and diet plans. To most persons excessive weight is no longer just a matter of ugly fat, but is an important factor in their own life span.

Action on Prevention

Now that heart disease, cancer, arthritis, mental illness and accidents have displaced infectious diseases as the major causes of morbidity and death, the individual must take action and must make considerable effort if the disease is to be prevented. Today the individual must have contact with his physician, for it is the doctor who will keep a person in sound health.

Not only has the public and the medical profession realized the significance of disease prevention, but also our industries want to do more in preventive medicine as it is applied to the industrial setting. Of course, the care of occupational injury and disease still is a vital part of our work, but it no longer can be our only function.

This need for a broader program of preventive medicine has been given strong support by most industrial physicians and this interest is stimulating research everywhere in this field. It is another contribution in a long line of significant, industrial medical advances made by the industrial physician — both full-time and part-time.

Whole Man

Today we know that a healthy man must be physically, mentally and emotionally healthy, and in our daily practice more of our treatments now are aimed at the whole man. In industrial medicine we are going to see more of this treatment of the whole worker, rather than treatment of just a disease or an injury.

Preventive medicine starts with the employment examination, and from there it can take off into many directions. It will be up to us, the railroad physicians, to see the opportunities we have for applying preventive medicine. How we meet the challenge of preventive medicine will eventually be measured in less absenteeism, lower payroll costs, better customer service, higher personnel morale, longer work lives for employees, better health for workers and their families and even better community health.

I am proud of the work that the American Medical Association's Council on Industrial Health is doing in this field of preventive medicine and in all phases of industrial medicine. For example, at the 16th annual Congress on Industrial Health of the A. M. A. last January in Detroit the meeting was devoted entirely to the subject of absence from work due to non-occupational illness and injury. The next Congress will be held in Los Angeles at the Biltmore Hotel on Feb. 4 through Feb. 6 and I know many of you will want to attend some of those sessions to pick up ideas from top authorities on what's new in industrial health.

Medicine and Industry

Just today in Chicago the A. M. A. Council on Industrial Health co-sponsored a program on "Medicine and Industry" during the National Safety Congress.

Occupational medicine authorities discussed three major industrial health problems: The injured back, vision in industry and the physical examination of industrial workers.

These are some examples of how the A. M. A. and its Council on Industrial Health are providing the leadership and cooperating with other groups. I also might mention that the A. M. A. is acting in liaison with the American Academy of Ophthalmology and Otolaryngology on the problem of noise in industrial and partial loss of hearing, and with the American Public Health Association and the American Society of Mechanical Engineers on the problem of air pollution.

Various pamphlets are issued by the A. M. A. Council on Industrial Health, too. For example, there is a series of articles on all kinds of industrial dermatitis — its causes, recognition and prevention. (These are available to you from the A. M. A. Council on Industrial Health. I have a few of these pamphlets here if you care to see them.)

A. M. A. Materials

Other new A. M. A. materials you might be interested in are "Guiding Principles and Procedures for Industrial Nurses" and "Guiding Principles of Medical Examinations in Industry." The industrial nurse pamphlet has received the plaudits of nursing organizations, various industrial medical associations and the National Safety Council. Already 15,000 copies have been sold or given away. In it two important points are stressed: The absolute necessity of professional guidance and supervision of the industrial nurse by a qualified physician, and the preparation of standard procedures or medical directives by the physician-in-charge of medical service, in consultation with the nurse.

I want to assure you that the A. M. A.'s Council on Industrial Health, like all the other councils, departments and bureaus of the A. M. A., stands ready to assist you, individually or as a group, on your various problems, including this growing field of preventive medicine.

I know you can set a high standard for preventive medicine in your role as railway physicians.

Second Area

Another area in which you have a big responsibility for setting high standards is in the courtroom in behalf of justice. Recently I spoke at the annual meeting of the American Bar Association in Dallas. The program was devoted entirely to expert testimony. After that meeting I became convinced that the medical profession has a distinct obligation to contribute its share to better the administration of justice.

In the majority of issues before our courts of justice



At the dinner of the Western Association of Railway Surgeons are (third from left, back row) Dr. Dwight H. Murray, president of the American Medical Association, and front row, left to right, Dr. Glenn F. Cuchman, San Francisco, president of the association; Mrs. Cushman; Dr. Harry O. Hund, San Rafael, Calif., treasurer; Mrs. Hund; Dr. John R. Winston, Temple, Texas, second vice president; back row, left to right, Dr. Newton F. Walker, president of the El Paso County Medical Society; Dr. Bernard McConville, Seattle, first vice president; Dr. Murray; Dr. E. W. Rheinheimer, El Paso, retiring president; Mrs. Martin Lindem; Mrs. Walker, and Dr. Martin Lindem, Salt Lake City, chairman of the Executive Committee.

a doctor in one way or another is called upon to help establish the truth. Without meaning to overemphasize the importance of the role of the medical witness, I must ask: "What would happen if medical testimony were not available?" Obviously, many would be deprived of justice. In the group would be both plaintiff and defendant. All would suffer.

We are motivated in our professional practice by humanitarian principles. We know and understand pain and suffering. Yet neither our motivation nor our understanding prevents us in our practice from assuming scientific objectivity and responsibility as we care for our patients.

Patients As Litigants

As our patients become clients or litigants, as they seek to prosecute or defend claims for redress we dare not permit ourselves to lose our scientific objectivity. We cannot carry sympathy and emotion into the courtroom — that is for others to do, if they will. We can and must keep records, make reports and, when required, testify, not as advocates for the one who retained us, but we must act objectively, conscientiously and truthfully.

We are members of a profession founded on high ideals. When we are called upon to participate in adversary proceedings we must maintain and exemplify, by our every act and deed those ideals which have made our profession great.

You are familiar with litigation. You have seen it in the courtroom and from the witness stand. You have heard effective witnesses and poor witnesses. You yourselves have witnessed the vagaries of juries. And undoubtedly, you've felt resentment as you have been subjected to not too subtle criticisms, or have been confronted with severe cross-examinations.

Science Mocked

You have experienced, I am sure, situations where you were confident that the medical findings were clear and yet you heard a colleague of good reputation testify to the contrary with all apparent honesty. Perhaps some among you have been ashamed to see the science of medicine mocked from the witness stand. Perhaps, in the frustration arising out of adversary proceedings you have been tempted to counter exaggeration with exaggeration and speculation with speculation. Perhaps economic forces have tempted others to ask you to be less than coldly and scientifically impartial.

Medical expert testimony is being criticized on all sides. Plans and systems are being proposed to remove, as far as possible, expert testimony from the realm of adversary proceedings.

I am not certain we need to modify our Anglo-Saxon system of litigation. I believe that medicine itself can, through each of its practitioners, demonstrate the honesty and integrity, science and humanity of medicine under the most severe cross-examination, under our present system. I believe this can be done if every doctor called on to act for either plaintiff or defendant, at any stage of litigation, recognizes and accepts the responsibility that is his.

He must report only on adequate examination and with full knowledge of the facts; he must be objective and impartial; he must be prepared for his role in litigation as he is for his role in medicine.

Important Nucleus

You are, as a group, perhaps more familiar with litigation than any other group of physicians. You who are experienced, you who have seen both good and bad in medical expert testimony from both sides of the fence — you represent a nucleus of physicians who can by your example, in and out of the courtroom, set so high a standard for preparation, honesty, scientific objectivity and impartiality that those physicians called by the opposition would be forced to devote equal time and attention to the preparation and presentation of their reports and testimony. You who more regularly make reports and testify must, by your own actions, individually and collectively, repudiate all actions of other physicians which deny the high ideals of our profession.

Just criticism against medical expert testimony must be acknowledged and steps must be taken to eliminate complaints. I repeat, gentlemen, you are in the enviable position, as individuals and as a group, of being able to set an example and to offer corrective procedures through studied and considered efforts of your own organization.

Northwest Texas Hospitals to Meet at Brownwood

Brownwood was selected as the site for the 1957 convention of the Northwest Texas Hospital Association at the organization's annual meeting in El Paso October 25 and 26.

New officers of the Association are Paul Ahlstedt, Wichita Falls, president; Agnes King, Brownwood, president-elect; C. H. Denning, Abilene, vice president. Trustees named were Milton Ramsour, Pecos; Monroe Owens, Dalhart; Doris Smith, Big Lake. Earl Benson, Odessa, was the retiring president.

Coming Meetings

The Texas District One Medical Association will meet in Pecos Feb. 12. E. W. Schmidt, M. D., of Pecos is president; and John P. Dunn, M. D., of Pecos is secretary-treasurer.

Edited by Andrew M. Babey, M. D., Las Cruces, N. M.

APHORISMS and MEMORABILIA

Miscellaneous Truths and Concepts

1. "If the patient needs increasingly higher doses of noradrenaline to maintain the level of the blood pressure, the prognosis is poor and the possibility of internal hemorrhage must be considered. Giving the infusion by an ankle vein carries a higher risk of skin and tissue necrosis than giving it by a large vein in the antecubital region of the forearm." *Brit. Med. Jour.* June 9, 1956; p. 1350

2. "A reasonable estimate of informed current opinion is that about 70 per cent of cases diagnosed ("ostes") within 24 hours of onset and energetically treated by penicillin will probably resolve completely without surgical drainage. The remainder will need some form of drainage either by aspiration or incision of the subperiosteal abscess or, occasionally, by direct drainage of a medullary abscess by drilling the bone. The older the child, the more likely is drainage of the bone to be necessary. The object of surgical drainage is not so much to deal with the infection as to limit the damage caused to the bone by the cutting off of its blood supply by an abscess under tension." *Brit. Med. Journ.* June 9, 1956; p. 1353

3. "Modern chemotherapy has practically eliminated the danger of death from acute osteomyelitis. One is now concerned with the morbidity rather than mortality. Delay in initiating treatment, or in the timing of drainage if indicated, carries the danger of a vascular necrosis of bone, chronic abscess formation within the bone (Brodie's abscess), and the possibility of periodic reactivation of the infection throughout life." *loc. cit.;* p. 1353

4. "We now know that the protein content of the diet is very important, because, on low protein diets, certain species of dogs and monkeys develop high blood cholesterol levels, which, at a higher protein level in the diet, do not occur. This probably is also true of man, and therefore the protein content of our diet should be adequate, and the fat content should be derived largely from vegetables." Wm. Dock; Sixty-Fourth Annual Meeting of the Association of Life Insurance Med. Directors of America; Oct., 1955; p. 9

5. "No other country has approached us in the way they take a high animal fat food, with low protein content. Eggs also have a relatively low ratio of protein to animal fat and cholesterol. We, more than any other people in the world, eat a diet which contains two foods which were never intended by nature for human consumption. Eggs were intended to produce little chickens, and milk was intended by nature to raise animals until their teeth allowed them to chew. That is what milk and eggs were intended for by nature, and, as Hippocrates and a few other doctors since have pointed out, whenever man does something which nature does not intend, he gets into trouble." Dock; *loc. cit.;* p. 9

Coronary Disease

6. The age at death of a-pack-a-day cigarette smokers from coronary disease is about ten years less than the age at death of nonsmokers with coronary disease. They all die of coronary disease, but one group has to stay around and meet the bills for ten years longer. If a person had no excess of cholesterol entering his body from an abnormal diet, I do not believe that any amount of smoking would give him coronary disease, but with the combination, the death rate is now going up, and the age at death is steadily falling." Dock; *loc. cit.,* p. 10

7. "We do know that if one wants to postpone the age at death from coronary disease, one will have as much vegetable fat — olive oil, cotton-seed oil, corn oil — as possible in the diet, and a low intake of dairy fat, egg fat, and animal fat in general." Dock; *loc. cit.;* p. 11

8. "I do not think I have ever heard of or seen any case of congenital hemolytic anemia which responded to corticosteroids. With or without underlying organic disease she has a 50 to 60 per cent chance of responding to corticosteroids if this is acquired hemolytic anemia. Response to steroid therapy would therefore constitute further diagnostic evidence in favor of acquired hemolytic anemia as opposed to the rare congenital hemolytic anemia with a positive Coombs test." Bernard M. Jacobson; *Amer. Pract. and Dig. of Treatment:* July, 1956; p. 1176

9. "It would seem to me that the main problem of medical education is this: Will the medical course be arranged primarily in the interests of educating the student, or primarily in the interests of the prestige of the teachers? I say this as a teacher and with a full appreciation of the meaning of the words I use." Geo. Pickering; *Brit. Med. Journ.* July 21, 1956. p. 115.

10. "Though it does not endanger life, the post-cholecystectomy syndrome is one of the most intractable and frustrating conditions the surgeon has to deal with." *The Lancet;* July 28, 1956. p. 184.

Illusions

11. "If, for any reason, we find ourselves stripped of our illusions and are no longer preoccupied with

activities of various kinds, we become conscious of the "emptiness of existence," and this is apt to cause anxiety and depression." H. M. Flanagan. *The Lancet:* Aug. 4, 1956. p. 245.

12. "Many people rely excessively on worldly interests and preoccupations, to the exclusion of a deeper, metaphysical orientation. To be "well adjusted" in the current and restricted sense of the term, with this exclusion of any seriously religious view of life, is perhaps ultimately inefficient and undesirable whatever its pragmatic value as a short-term policy." H. M. Flanagan. *The Lancet;* Aug. 4, 1956

13. "The picture of the indwelling catheter can be no less gloomy. It is often indwelling only in name: in fact, it keeps slipping out, and every time it is reintroduced the number and virulence of implanted organisms increase five, ten, or a hundred fold." *The Lancet;* Leading Articles. Aug. 18, 1956. p. 344.

14. "Indeed, in few surgical undertakings can neglect of a small detail lead so irretrievably to disaster as in bladder drainage; for the borderline between the localized infection that is merely a nuisance and the one severe enough to precipitate renal failure can be transgressed at any moment." *The Lancet;* Leading Articles. Aug. 18, 1956, p. 344.

15. "The screaming disorientated patient, reeking of paraldehyde and rattling at his cot-sides, festooned by a maze of tubes, and barricaded from his fellows by an array of screens, is not just "a problem": he is a disgrace." *Loc. cit.*

16. "It has been said of partial gastrectomy that individual statistics are too good to be true, and massed statistics too true to be good." *Loc. cit.*

Survey of Cases

17. "An interim report of a survey of cases of malignant disease and leukemia in childhood which suggests that these conditions are considerably commoner in children whose mothers have had x-ray examinations of the abdomen during pregnancy." *The Lancet;* Leading Articles. Sept. 1, 1956, p. 449.

18. "We cannot believe the patient who tells us in the first interview that he has no worries. He really may believe this, or he may not yet be sure whether he can talk freely to us." Philip Hopkins, Special Articles; *The Lancet;* Sept. 1, 1956, p. 456.

19. "The heart of style is consideration for the reader, and it is not for nothing that style has been defined as good manners in writing." Raymond Whitehead; Special Articles, *The Lancet;* Aug. 25, 1956, p. 392

20. "A good writer would never publish anything that had not been operated on by word surgeons. To submit to their operations is not a sign of weakness, but an indispensable aid to style." *Loc. cit.* p. 393.

21. "The surgeon who works too hard for too many may be an object of awe to his juniors and of admiration to his fellows; but to his patients he is a source of apprehension. To the sick the sum total of his work matters nothing: their human egotism inflated by disease, all they are concerned about is that the tired look, the sallow complexion, and the irritable manner of their doctor augurs ill for their own future." *The Lancet;* Leading Articles, Aug. 11, 1956; p. 294

"POINTERS"

From the Case Records of the Massachusetts General Hospital 1952*

1. "... the most common cause of myocardial rupture is infarction. The consensus from a large series is that rupture occurs in eight to nine per cent of acute myocardial infarctions. When, as is most common, the rupture occurs through the anterior or posterior wall of the left ventricle, hemopericardium and sudden death result; rarely, the rupture may occur through an infarct of the interventricular septum, in which case the patient may live for several months, usually with severe cardiac failure." p. 30

2. "... thromboplebitis. This is a manifestation not infrequently seen in cancer of the pancreas. In some 30 per cent of such cases in one series involving the head and body of the pancreas, multiple venous thromboses were found." *loc. cit.:* p. 149

3. "I think the experience here has been that if if there is chronic infection in the lung or somewhere else and if secondary involvement to that infection occurs in kidneys, it is more often pyelonephritis than chronic glomerulonephritis." *loc. cit.;* p. 233

4. "Usually sarcoidosis is a roentgenologic surprise, with lesions out of all proportion to the constitutional symptoms." *loc. cit.;* p. 264

5. "In our material the stomach is probably the first source of metastatic cancer that has pulmonary lymphatic spread of metastases, with the pancreas second." *loc. cit.;* p. 265

Common Feature

6. "Pigmentation is a common feature, moreover

of chronic small-intestine insufficiency. Many patients with sprue, some with ulcerative colitis and some with ileitis have extensive pigmentation. The fact that the patient had pigmentation to such a degree that she was mistaken for a negress, — which I must admit I have never seen, — is not incompatible with an intestinal disorder." *loc. cit.;* p. 378

7. "Steatorrhea of intestinal origin usually indicates a very diffuse disorder and even if half the intestine were peppered with granulomatus jejunoileitis, steatorrhea would not be so prominent." *loc. cit.;* p. 378

8. "... about six per cent of patients with atrial septal defects had mitral stenosis in a sizable series of cases collected from several hospitals in Boston. If only adult cases are considered, the incidence of mitral stenosis is about nine per cent." *loc. cit.;* p. 424

9. "Deficiency of body protein (low serum protein) may be due to: (1) lack of raw material — i. e. amino acids, (2) lack of power to produce protein i. e. insufficient caloric intake, (3) the finished product, protein, is being filched somewhere along the line — i. e. catabolism as in chronic alarm reaction, (4) deficient machinery to make protein — i. e. liver disease; but kidney disease, for some reason, and also pancreatic disease may make it difficult for the liver to produce protein, aside from any deficiency in absortion." A composite; *loc. cit.;* p. 508

10. "... profound muscular weakness set in, so that the patient was unable to hold up her head or lift her arm. That is strongly in favor of dermatomyositis. As is characteristic of dermatomyositis, the muscles were weak and not tender." *loc. cit.;* p. 586

Ulcerative Colitis

11. "No patient with ulcerative colitis and ileostomy, whose colon is left in place, should go without medical surveillance for any long period of time. According to several sets of statistics on carcinoma in patients with chronic ulcerative colitis, the incidence varies somewhere between two and seven per cent. When these statistics are put together, the average incidence of cancer in the colon is probably about five per cent in patients who have chronic idiopathic ulcerative colitis." *loc. cit.;* p. 665

12. "I think that in this hospital only one patient survived who developed cancer in the face of ulcerative colitis. By the time we know cancer is present, it is too late in most cases." *loc. cit.;* p. 666

(To Be Continued)

*We are grateful to Dr. Benjamin Castleman, Editor of "Case Records" and Dr. Joseph Garland, Editor of "The New England Journal of Medicine" for permission to publish these excerpts. They will appear regularly and cover the years 1951 through 1955. — Andrew M. Babey, M. D.

Aphorisms Concerning Chest Diseases—Trauma

By E. S. Crossett, M. D., El Paso

(Continued)

13. Hemorrhage from the lung itself is self limiting except when the injury involves the large vessels, internal mammary or one of the larger vessels of the chest.

14. As with pneumothorax, the diagnosis should be confirmed by X-ray as soon as possible and closed drainage applied. This seems to be more desirable than repeated thoracentesis since it evacuates blood from the pleural cavity more effectively than can be accomplished with a needle. The presence of continued bleeding can be recognized early as blood will continue to escape from the chest tube. If clotting of blood in pleural cavity occurs, it makes the use of enzymatic debridement safer and more effective.

15. When enzymatic debridement is necessary, the best results will be obtained when the treatment is started within 36-48 hours after the hemorrhage.

16. Penetrating wounds below the level of the tip of the scapula, should always be suspected of having penetrated the diaphragm because of the variable location of the diaphragm during inspiration and with any suspicion of intra-abdominal injury, exploration should be carried out. Shock and falling hematocrit, disproportionate to the chest injury are suggestive of ruptures or tears of the spleen or liver.

17. In severe crushing wounds of the chest, especially the anterior or steering wheel type, one must be on the look out for contusion of the heart. An injury to the heart will be suggested by transient or persistent tachycardia. EKG should be obtained in all of these patients and repeated at intervals.

18. Traumatic injuries of the esophagus are rarely seen with its location adjacent to the vital structures in the mediastinum. Penetrating injuries to the mediastinum are usually associated with the fatal wounds of the heart or aorta and are therefore seldom recognized. In non-fatal cases, a perforated esophagus causes mediastinal emphysema and usually a pneumothorax. There is usually a tachycardia and pain and difficulty on swallowing. When recognized, these wounds should be repaired as soon as possible.

ORIGINAL ARTICLES

Fatty Infiltration of the Parotid Gland

Second Reported Case

By James M. Ovens, M. D., Phoenix

Gilman, et al[1] have recently reported the first case of fatty infiltration of the parotid gland simulating a tumor reported in the English literature. At the time of this publication there was under my care a man with a similar condition whose case is now reported.

CASE REPORT

A 48 year old man was entirely asymptomatic until it was brought to his attention that he had a swelling in front of the right ear. This swelling was entirely painless, non-tender and asymptomatic. There was no history of remote or recent injury to the area. He consulted a physician within one month.

Physical Examination revealed a well developed, well nourished and healthy appearing white male 48 years of age. His height was 180 cm. and his weight was 81.8 Kg.

The pertinent points on physical examination of the head and neck were as follows: There was a swelling anterior to the tragus of the right ear and inferior to the zygomatic process that measured 2.5 by 3 cm. in size, and protruded 1 cm. outward beyond the inferior margin of the zygomatic arch. The mass was entirely preauricular and did not extend beneath the lobule of the ear. The skin over the tumor was smooth and freely movable. The tumor itself was only slightly movable, and seemed fixed to the deeper structures. This mass was firm, but not stony hard. Examination of the right auditory canal both digitally and with the otoscope disclosed no evidence of invasion of the auditory canal. The function of the facial nerve was bilaterally symmetrical. On the opposite side of the face there was no infrazygomatic swelling and no tenderness. Examination of the neck revealed no evidence of cervical lymphadenopathy suggestive of metastasis. Chest X-ray showed no parenchymal pathology and no evidence of metastasis.

This patient was operated on on January 16, 1956. The swelling in the region of the right preauricular area was approached by means of a vertical incision, centering anterior to the tragus of the right auricle. Skin flaps were dissected and the tumor approached. The dissection was carried down to the parotid gland, and the temporal and zygomatic branches of the facial nerve were dissected free from the tumor and retracted. The capsule was found to be rather thick and appeared light yellow in color. What appeared to be fatty tissue was dissected free from the capsule of the parotid gland. The parotid gland itself was entered and the tumor was situated deep in the parotid gland. The tumor was dissected free from the parotid gland and from the temporal and zygomatic branches of the facial nerve. The tumor was non-encapsulated and blended diffusely with the surrounding parotid gland. The tumor itself measured 3 by 2 by 1.5 cm. in size. Thorough hemostasis was secured and the area closed in layers without drainage.

The Pathologic Report of the tissue removed disclosed the following: gross examination showed multiple, slightly fibrous and fatty masses of tissue with some salivary gland tissue. The largest mass measured 3 by 2 by 1.5 cm. Frozen section on one small mass initially submitted at surgery showed reactive lymphadenitis with fibrosis. No evidence of tumor was found on frozen section. Microscopic examination of the paraffin sections disclosed multiple sections revealing salivary glandular tissue with an essentially normal pattern and fragments of lymphoid tissue showing a reactive lymphadenitis and fibrosis. (Fig. 1). No evidence of malignancy was found. The only alteration noted was a fatty infiltration of the salivary gland tissue. The pathologic diagnosis revealed:

1. Fatty infiltration of the parotid gland, non-neoplastic.
2. Chronic fibrous lymphadenitis, non-specific.
3. No evidence of malignancy.

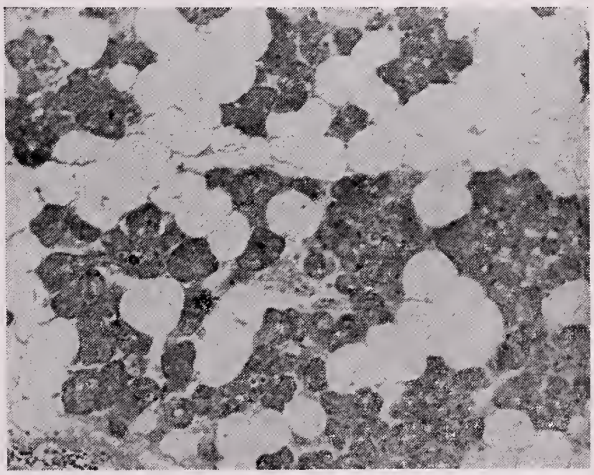


Figure 1
Fatty Infiltration of the Parotid Gland

Discussion

This unusual case was operated upon ten days after

(Continued on page 747)

Acute Suppurative Jejunitis with Perforation Due to Enteroliths*

By Horace L. Wolf, M. D., and Francis J. Kelly, M. D., F. A. C. S., Amarillo, Texas

Frink (1) in 1952, stated that probably not more than 25 cases of enteroliths had been reported in the literature. Downing (2) defines an enterolith as "a foreign body composed of earthy salts formed about some nucleus such as a fruit stone". He believes that the terminal ileum is the most common location for fecal masses in the small intestine because of its small diameter and its folds of mucous membrane. Downing (2) distinguished coproliths from enteroliths, defining coproliths as "masses of inspissated feces combined with cholesterol and bile". He says that coproliths are more common in the colon because of the frequency of diverticula in the large bowel. The semisolid nature of the contents of the colon explains the numerous fecaliths that accumulate in the colonic haustra. He reports a case of obstruction and perforation in the small intestine due to a coprolith.

Edwards (3) also has found that enteroliths causing intestinal obstruction are rare. In reporting his case, he believed that the fluid nature of the contents of the normal small intestine explained the infrequency of enterolith formation in this organ. Frink (1) notes that almost all the reported cases have occured in women. He refers to Mattson, (4) who had found that the nucleus of enteroliths may consist of intestinal epithelium, a small fecal mass, a fruit stone, a gall stone, or other foreign body about which alkaline mineral salts of calcium, phosphorus, magnesium, or ammonia may be deposited. They are thought to develop in the presence of stasis in an alkaline medium. Frink (1) writes that enterolith obstruction is commonly seen in horses; he gives an excellent review of the literature on this subject up to 1952. Frink (1) also found that cases of enterolith resulting in acute peritonitis are very infrequent. We have been able to review a case report by Richards (5) in which enteroliths caused obstruction of the small intestine in a 44 year old white female. Biochemical analysis indicated that the enteroliths were composed of fat, a moderate amount of calcium and magnesium phosphates. Blotner (6) reported a 50 year old white male with a trapped fecalith, in a cecal haustration, causing local necrosis. De Witt (7) and associates reported a fecalith of the small intestine, composed of inspissated fecal material and a moderate number of vegetable fibers.

Case Report

An 80 year old white female was admitted to the hospital on 12-18-54, with a history of stomach ache for two to three weeks. A similar, though very mild episode, was recalled in about 1952, and was attributed to over-eating. The night of 12-17 to 12-18-54, much discomfort had been noted, and she had vomited one time the morning of 12-18-54. There had been no diarrhea. Past history: A non-toxic goiter had been removed surgically at age 46. Because of high blood pressure, she had been taking mannitol hexanitrate, 1 tablet three times daily. She had also received digitalis several years. Review of systems added no additional information.

Family History: One son has mild ulcerative colitis. One sister had died of cancer of the uterus. No other relevant information was obtained. Social History: The patient lived in a home for the aged in another city and was visiting her son in this city at the time of her acute illness. She had followed no special diet, and on questioning, her diet was quite well balanced. Examination: An elderly white female, deaf, with thinning of the hair of the head. When first seen, she was vomiting and complained of acute pain in her mid-abdomen. Blood pressure was 170/0. On initial examination her pulse revealed frequent premature beats; basic rate was 84 per minute. Later her pulse was regular at 72 beats per minute. Her EKG revealed digitalis effects only. There was no icterus. A well healed thyroidectomy scar was noted. Clinically the heart was not large, and was free of murmurs. A complete regional physical examination was within normal limits, except for the abdomen. Considerable distention was noted, but no rigidity. There was moderate rectus muscle diastasis. There was some voluntary muscle guarding of the abdomen. Tenderness was generalized throughout the entire abdomen, being somewhat increased in the lower part of the epigastrium and the right abdomen. Rebound tenderness was present throughout the entire abdomen, especially on the right. Peristalsis was hypoactive. Bimanual pelvic examination was essentially negative. Rectal examination revealed an empty rectum.

Laboratory Studies

Laboratory studies: red blood count — 4.75 million red blood cells per cu. mm., hemoglobin 14.8 grams %, and white blood cells 17,000 per cu. mm. with 26% stabs, 67% segs. and 7% lymphocytes. A voided urine specimen was within normal limits except for a faint trace of acetone. Four hours after admission, the white blood count was 27,000 per cu. mm., 50% stabs, 2% juveniles, 1% myelocytes, 41% segs, 3% lymphs, and 3% monocytes. Serum amylase 2.5 units (normal-22 to 40 units). A serologic test was negative. Pre-operative frontal and upright x-rays of the abdomen revealed a normal gas pattern. There was no evidence of fluid levels, nor of free air beneath the diaphragm. The liver shadow was moderately enlarged; soft tissue shadows were otherwise normal. Demineralization of the bones with evidence of osteoarthritis, and aortic arteriosclerosis, was noted; there was no evidence of calculi. The abdomen was slightly

* From the Medical and Surgical Services, Northwest Texas Hospital, Amarillo, Texas

hazy, but otherwise, no abnormality was seen. Wangensteen suction was instituted.

Four hours after her admission her temperature was 99.1 F. Reexamination revealed the patient to be somewhat less tender through the left abdomen, but the muscle guarding was essentially unchanged. In the right abdomen, slightly more tenderness was elicited. Just before surgery her temperature was 100.6 F.

Operative Findings

Operative Findings: On entering the abdominal cavity a moderate amount of free fluid of a milky serous nature was found. Most of the intestinal serosa showed evidence of peritonitis and the milky serous fluid was present in all areas of the abdominal cavity. Marked inflammatory reaction was present over a 12 inch loop of distal jejunum with a thick exudate present over the midportion of this loop. At this location a perforation two mm. in diameter was found. Two small diverticula were present just proximal to the perforation. The mesentery was inspected and appeared normal. Resection of twenty-eight inches of the involved area was performed with an end to end anastomosis. One-half gram of Neomycin was placed in the proximal loop prior to the anastomosis. No evidence of biliary fistula was found.

The gross description of the specimen was as follows. The specimen is a segment of small bowel, 60 cm. long. It ranges to 2.5 cm. in diameter. Mesenteric fat extends out 4 cm. and ranges to ½ cm. in thickness. The mesenteric blood vessels, on cross section, are patent. The mesenteric lymph node is tan-gray, centrally, and is 5 mm. in diameter. In the mid portion of this resected specimen, the serosa at a level of 14 cm. is covered with a greenish gray fibrinous exudate and mottled with small hemorrhages. There is a recent perforation along the one margin 14. cm. from the amputated end. This hole in the intestine is 1 cm. in diameter and the serosa laterally is ragged and lacerated. Within the lumen of the intestine there are firm, brown, somewhat friable but hard fragments, like calculi. The mucosa in the central portion has many superficial ulcer defects ½ to 1.2 cm. in diameter. They are grayish brown and sharply demarcated and they erode through the transverse mucosal folds along the mesenteric side. There are 10 of these ulcers. On cut surfaces through the ulcers some are found to penetrate through the muscularis. At the base of them, the tissues are soft and friable. In the submucosa, along this segment of the bowel, there are numerous yellowish white nodules that are about 1 mm. or less in diameter.

Microscopic Findings

Microscopic Description: Numerous sections are made of the ulcers of the intestine. The mucosa is absent at these levels, and there are masses of neutrophiles with intermingled clumps of bacteria and deposits of fibrin. One of the ulcers extends through the entire thickness of the wall and shows complete necrosis of the muscularis with only remnants of thin fibrinous strands. Along the lateral margins there are exudative inflammatory cells. The submucosa along the lateral margins of the various ulcers is edematous with diffuse infiltrations of neutrophiles and lymphocytes. The blood vessels show no occlusion changes and they are filled with masses of red blood cells. The serosa is thickened by fibrinous exudate.

Diagnosis: Segment of jejunum with acute ulcerative and suppurative jejunitis with focal grangrene and peritonitis.

Pathologist's Comment: This remarkable case of suppurative jejunitis shows many of the histological features seen in suppurative appendicitis. The luminal contents, instead of being liquid, in this case were firm, concretion-like masses. The only explanation for formation of these mucosal ulcers with resulting inflammation, could be based on the concretion-like masses. It was opposite these calculi that ulcers were found, permitting penetration by local bacteria with resulting peritonitis.

The patient made an uneventful recovery.

We are indebted to John Denko, M. D. Pathologist, Northwest Texas Hospital, Amarillo, Texas, for the tissue reports in this case.

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Fatty Infiltration . . .

(Continued from Page 745)

the first case was reported in the English literature. The condition is to be considered in the differentiation of tumors in the parotid region. The condition, by its nature, is self-limited and non-malignant. Surgery is necessary only for cosmetic reasons and to differentiate this from more serious conditions arising in this area.

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MONTHLY CLINICAL PATHOLOGICAL CONFERENCE
EL PASO GENERAL HOSPITAL

October 23, 1956

FREDERICK P. BORNSTEIN, M. D., EDITOR — CASE NO. 16949

PRESENTATION OF CASE BY DR. GILBERT LANDIS

History — Dr. Celso C. Stapp

This 13-year-old white female was admitted to the hospital on July 22, 1956 with a complaint of abdominal pain and swellings of one week's duration.

The patient began having pain in the lower abdomen about one week prior to admission. Her abdomen felt bloated and she developed nausea. Each day symptoms became more noticeable and on the day of admission the patient noticed a mass in the lower abdomen and had vomiting and frequency of urination. The pain became quite severe. The pain extended across the entire lower abdomen and around the umbilicus. The patient had been treated for a few days for cystitis. She also had taken laxatives for constipation for an unknown period of time.

Past History: No serious illnesses or surgery. The patient had had measles, mumps, and chicken pox.

Family History: Father age 41, mother age 39, living and well. Three brothers age 19, 11 and 6; the eldest had rheumatic fever when five years old. Three sisters age 21, 7 and 1½; the middle sister had jaundice when 18 years of age.

Menstrual History: onset 12 years of age, regular 28 day cycle, lasting 4 days, with no pain. Last menstruation June 28, 1956 and was normal.

Physical Examination

Height five feet two inches, weight 102 pounds. Temperature 98.4, pulse 100, respirations 16, B. P. 120/80. Pupils were equal and reacted to light and accommodation. There was some horizontal nystagmus. The mucus membranes were normal. Thyroid was normal to palpation. Heart and lungs were normal, X-ray of the chest was normal. Breasts were normal in development for a girl of 13 years.

Abdomen: A firm mass in the exact midline extended from the umbilicus into the pelvis. It was smooth and could not be moved. There were no sounds heard over the mass. Peristalsis was heard on either side and above the mass.

Vaginal examination: The vagina would admit one finger. Outline of the uterus could not be determined, neither could the adnexa be palpated, as the mass filled the pelvis. Hymenal ring was intact. A small speculum revealed an entirely normal appearing small cervix. Vulva was normal. Pubic hair was of female distribution and there was no evidence of hirsutism. The clitoris was small. Rectal examination was negative. The skin was clear and free of scars or exanthemata. Bones and joints were freely movable and symmetrical. Development was what would be normal for a girl of 13 years. Reflexes were equal and there were no abnormal reflexes. Admission diagnosis was possible pregnancy.

Hospital Course

Admitted July 22, 1956. WBC 8,900, Hb. 13 gms., polys 79, lymphs 19, mono 2; Urinalysis: specific gravity 1.020, negative for sugar and albumin, microscopic negative. An A-Z was ordered and an X-ray of the abdomen. 7-23-56: WBC 8,700, Hb. 11.5, polys 79, lymphs 21; Urinalysis, specific gravity 1.018, microscopic negative.

Pain had become more severe and by afternoon temperature rose to 101, pulse 100, respiration 18, B. P. 116/68. P. M. blood count was 3,000,000, Hb. 10.5 gm., WBC 12,700, polys 62, lymphs 36, mono. 1., eosinophiles 1.

Surgery was then performed and one unit of blood given.

X-ray 7-23-56: Flat plate of abdomen showed soft tissue shadow arising from pubis consistent with possible ovarian cyst. No evidence of fetal parts. Lumbar spine and pubis appear normal. Psoas shadows and peritoneal fat lines are present bilaterally. Kidneys are normal in size and shape and position. Conclusions: Soft tissue mass consistent with ovarian cyst. Dermoid cyst cannot be excluded.

The day after surgery the A-Z was reported negative. Patient had an uneventful recovery.

Discussion — Dr. Gilbert Landis

Briefly we have here the case of a 13-year-old-girl with normal menstrual history admitted because of abdominal pain and swelling of one week's duration. During the course in the hospital her pain became more severe, her temperature went up to 101, her hemoglobin and red count went down and her white count went up. The first thing that comes to mind is did this large mass develop within the period of her complaint? That is, within the one week prior to admission.

The answer is, probably not. This mass was probably noticed by the patient because of pain or discomfort and probably had been present for some time. Secondly, why did a mass such as this cause

pain? First it may have been pressure; second, the pull on its attachments; third, a hemorrhage within or without the mass; fourth, a spill with peritoneal irritation; fifth, torsion with infarction and peritoneal irritation; and sixth, inflammation.

Treated For Cystitis

You notice she had frequency prior to admission and had been treated for cystitis. I believe this can probably be explained by pressure from the mass on the bladder. You notice that the admitting doctor was highly suspicious and admitted her as a possible pregnancy. I think he is to be commended for his high index of suspicion. In gynecology we have a saying we consider all females pregnant until proven otherwise.

As most of us find out sooner or later, pregnancy is a difficult diagnosis to rule out in many cases. However, this girl had a virginal introitus, she had no history of missed periods, the mass extended to the umbilicus without fetal heart tones, without evidence of fetal skeleton in the X-ray. The A-Z test was later reported as negative; it was drawn before surgery and reported after surgery. Furthermore, she had no irregular bleeding on admission. The weight of this evidence is against intra-uterine and ectopic pregnancy.

Extragenital Causes

Let us consider the extragenital causes of this symptom complex in these findings. Pelvic abscess should be considered. Her urinalysis was negative, she was reported to have two normal kidneys in normal location on her KUB, and her temperature was normal on admission.

Next we must consider tumors of the uterus. I have never known a leiomyoma in a patient of this age. With her menarche approximately a year before her admission to the hospital, it is highly unlikely that she could grow a tumor of this size, a tumor such as leiomyoma that depends on estrogen for its growth. A possibility here is a double uterus with a single cervix and atresia of the canal with a hematometra.

Spill from the tube could account for the evidence we have of peritoneal irritation, namely, a leucocytosis of 12,000, drop in hemoglobin, and temperature of 101. The size of the tumor, however, is against this. A sarcoma botryoides should be considered. This is a tumor of young women and infants, usually a tumor of the vagina or cervix, it grows to very large size, and is extremely malignant. However, I doubt that this is a sarcoma botryoides; it would be extremely rare.

Adnexal Tumors

Lastly we should consider adnexal tumors which are the most likely diagnosis. You must consider cysts developed from embryonic remnants; you must consider neoplasms, both functional and non-functional. We also must consider such cystic lesions as endometrial cysts, corpus luteum cysts and so on. This could be a para-ovarian cyst or interligamental cyst developed from the fallopian body in the meso-salpinx. They rarely develop to this size, however, and note that on examination this lesion was said to be firm. These lesions are not the tense lesions that we see with some of the other types of ovarian cysts.

Follicle cysts would rarely, if ever, grow to this size. Cystic corpus luteum usually gives rise to irregular menstrual periods, and in addition is usually the size of a lemon or orange and would rarely grow to this size. I think a luteum cysts associated with a mole would grow to this size, however, I am going to state that she is not pregnant and has not been pregnant and we can exclude that.

Endometrial Cyst

Endometrial cyst is something that could be considered, although here again age is very much against it. She had normal periods without pain, and these lesions are usually small, although they may grow to that size. In favor of endometrial cyst is the firmness of the lesion and the tenderness and pain that she had.

Cystadenomas are the most common variety of neoplasm of the ovary. However, her age is very much against this diagnosis also. The size and firmness are in favor of a diagnosis of cystadenoma.

Teratomas are a good possibility; dermoids do occur in this age group. They are not uncommon in this age group, they are firm to feel, and even though we have no evidence of calcification or teeth on the X-ray, I believe a dermoid is an excellent possibility.

Carcinoma of Ovary

Carcinoma of the ovary is of course mostly a lesion of the aged and would be very unlikely in her. A Brenner tumor may grow to be very large. It's a solid tumor and that is a possibility although it is not usually thought of as a lesion of this age group.

A disgerminoma is a tumor of early life, a highly malignant tumor, but extremely rare. Oddly enough it is frequently associated with pseudo-hermaphrodites, patients with under-developed sexual organs. She is said to have normal development of her sexual organs. The disgerminoma is a non-functioning tumor, which does not produce any hormones. It is a possibility but a very slim possibility.

Cell Tumors

Granulosa cell tumors and thecal cell tumors do occur in patients of this age. These are quite common among the solid tumors of the ovary; however, they are usually thought of as estrogen producing tumors, and we have no evidence of estrogen production in this girl. Moreover, she had normal menstrual periods. However, the highly undifferentiated granulosa cell tumors may not produce estrogens, and this one may be of that type.

We have the masculinizing tumors such as ar-

rhenoblastoma which occur in this age group; however, here again we have no evidence of clitoris hypertrophy or any evidence of masculinization. A fibroma of the ovary is unlikely because of the age group.

Summary

In summary, we have here a lesion, probably of ovarian origin, most likely cystic. This lesion gave rise to pain, nauseau and vomiting, with sudden increase in pain, leucocytosis and fever and drop in hemoglobin and red count. So something happened to this lesion. I believe it is most likely due to torsion; it may be due to hemorrhage within the lesion. Due to the size of the lesion, the firmness, the age group, I believe that probably this lesion is a dermoid cyst with torsion. In any case, certainly an exploratory laporotomy is indicated. I believe rarely would the diagnosis be made pre-operatively.

Dr. Charles E. Webb

The only condition I can think of which you didn't mention, and it is in the right location (whether they get that large or not I don't know), is a urachal cyst.

Dr. Celso C. Stapp

On opening the abdomen there was a solid tumor, approximately, I would guess, 20 cm. in diameter, quite firm, with hemorrhage into the tumor mass. It was a tumor of the right ovary, twisted upon its pedicle.

Clinical Diagnosis: Twisted ovarian mass

Dr. Gilbert Landis' Diagnosis: Dermoid cyst with torsion

Pathological Diagnosis: Disgerminoma of ovary with torsion and hemorrhagic infarction.

Pathological Discussion —
Dr. Frederick P. Bornstein

Dr. Landis came as close to the diagnosis and essential pathological mechanism responsible for the symptoms as possibly could be expected pre-operatively. As you have heard from Dr. Stapp, there was a twisted, round, hemorrhagic tumor mass. On sectioning, most of the mass had undergone hemorrhage and necrosis and there were only a few areas available for good histopathological sections. The tumor is composed of uniform large cells with round dark nuclei and ample polygonal cytoplasm.

Between these clusters one sees a few accumulations of cells resembling lymphocytes. This is a rather characteristic picture which duplicates the picture that is found in tumors of the testicle and the diagnosis here is that of a disgerminoma of the ovary. This is a definitely malignant tumor. In this particular case the prognosis may be fairly good because the tumor was well encapsulated and there were no signs of local invasion beyond the capsule.

There is no doubt that this tumor was present for quite a while and then increased rapidly in size after it became twisted and hemorrhagic.

Tumors Of The Ovaries

Perhaps I can try your patience for a few minutes with some remarks about tumors of the ovaries. Although tumors of the ovary represent the beginning of surgical pathology, the first specimen ever being removed from the abdomen being an ovarian tumor, their proper classification has only been achieved in the last few decades.

Many of these tumors were not clearly understood when I went to medical school 25 years ago, and the men mainly responsible for their classification such as Robert Meyer, Schiller, and Brenner, are nearly our contemporaries. This fairly recent development in connection with the confusion of the terminology of the older literature has created the impression that the classification of these tumors is a highly complicated one. I have tried to simplify the classification by the accompanying chart. (Figure 1)

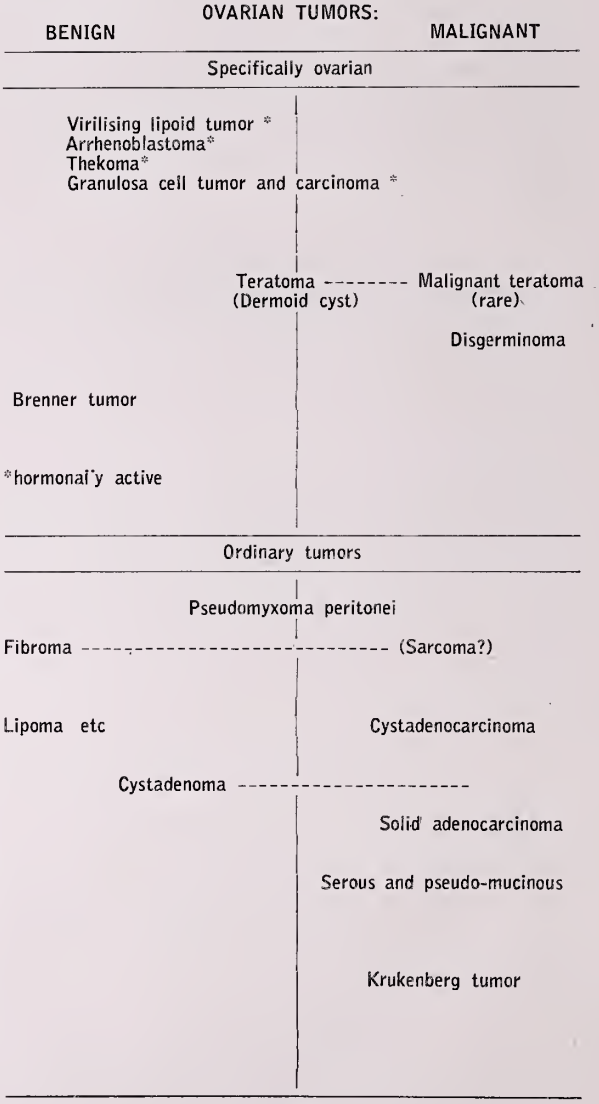


Figure I

(Continued on Page 755)

Serum Lipids in Atherosclerotic and Normal Subjects Studied By Paper Electrophoresis

By I. Rosenberg, M. D., New England Center Hospital, Boston

Using the technique of paper electrophoresis a comparative study was made of the serum lipids of persons with and without coronary atherosclerosis. Two groups of subjects were studied; the arteriosclerotic group consisted of 16 men and 5 women whose average age was 55 and who presented evidence of previous myocardial infarction; the control group was made up of 18 women whose average age was 30 and who were either in good health or hospitalized for disorders unrelated to the cardiovascular system. Electrophoresis of the serum samples was performed on filter paper (0.02 cc. serum per cm. width of paper) with pH 8.6 veronal buffer (0.025 M), a potential difference of 7.5 volts per cm. being maintained for 5 hours. Parallel strips of paper were then stained for protein (bromphenol blue) and lipid (Sudan IV). The concentration of protein and stained lipid in successive portions of the paper was determined by scanning each strip in a photometer at 625 and 540 m*u*., respectively, and curves were then drawn describing the optical density at each point of the paper strip for protein and for lipid. The areas under the sudanophilic lipid curves were measured by planimeter.

Lipid Zones

Four protein bands (*y*, *B* and *a* globulins and albumin) and two lipid zones were noted in all instances. The major lipid zone, extending from the origin to the *B*-globulin region, showed a peak near that of the *B*-globulin peak, and was considered to represent *B*-lipoprotein; the smaller lipid area extended from the end of the *B*-lipoprotein through the albumin zone and corresponded to *a*-lipoprotein. Several quantitative differences were found between the electrolipograms of the two groups. The average value for the total quantity of stainable lipid in the atherosclerotic group was 28% higher than in the controls. The relative proportion and absolute quantity of *B*-lipoprotein was higher and of *a*-lipoprotein lower in the atherosclerotic as compared with the control group; in the former 81.6% ± 7.9 (S.D.) of the total lipid was in the *B*-lipid region and 18.4% in *a*, while in the controls the corresponding values were 70.3% ± 6.1 and 29.7. Although there was overlap of individual values within the two groups, in only 5 of the atherosclerotic patients was the proportion of total lipid in *B*-lipoprotein less than 78%, and only one person in the control group exceeded this value. In order to express variations in the relative mobility of the *B*-lipoprotein peak with respect to the *B*-globulin peak, an arbitrary ratio (R) was chosen,

$$R = \frac{\text{distance from } y\text{-globulin peak to } B\text{-lipoprotein peak}}{\text{distance between } y\text{- and } B\text{-globulin peaks}}$$

the measured lengths being projections on the abscissa of the observed distances. The average value for R in the atherosclerotic and control groups were 0.94 and 0.86 respectively, a difference of only border line statistical significance. However, in seven of the atherosclerotic group the value of R was 1 or greater (av. 1.09), while in the remaining fourteen the average value was 0.86, as in the control group. In only one member of the control group did R equal 1. The results are summarized in the table.

Disparity

Although the disparity between the groups studied in regard to age and sex makes it impossible to interpret the electrolipographic differences solely in relation to the presence or absence of atherosclerosis, these groups were chosen for study so that the difference between them with respect to the presence of atherosclerosis might be as great as possible. The electrolipographic results are in general agreement with those studies in which the proportion of plasma cholesterol in *B*- and in *a*-lipoproteins has been determined. Although the electrolipographic method has obvious limitations as an aid in the diagnosis of atherosclerosis, it may be useful as a simple and rapid procedure for estimating the relative proportion of *B*- and *a*-lipoproteins.

Table

Number of subjects	*Atherosclerotic* 21	*Non-atherosclerotic* 18
Age	39-73 (av. 55)	16-49 (av. 30)
Sex M	16	0
F	5	18
Serum cholesterol (mgm.%)	227	191
Distribution of lipid (% of total)		
B-lipoprotein	81.6 ± 7.9*	70.3 ± 6.1*
a-lipoprotein	18.4	29.7
R	0.94	0.86
	1.09 (7)	
	0.86 (14)	

*Standard Deviation of the Mean.

The Patient with Coronary Disease as an Operative Risk

By Benjamin Etsten, M.D., Daniel C. Weaver, M.D., J. B. Friedmann, M.D., and Samuel Proger, M.D.,

From the Departments of Anesthesia and Medicine, Tufts College Medical School, Pratt Diagnostic Clinic, and New England Center Hospital, Boston

A recent study[1] has shown that the life expectancy following recovery from the first attack of myocardial infarction is longer on the average than was indicated in earlier studies. Many of these patients may live long productive lives after the occurrence of a myocardial infarction. This factor, in addition to the increasing longevity of the population, will increase the frequency of the problem of whether or not to recommend surgery for such patients.

There are several factors that deserve consideration before advising surgery to patients with coronary disease, namely: an appraisal of the general condition of the patient, the necessity of the operation, and the operative risk. As a result of the recent rapid progress in anesthesiology, particularly of the improved ability of the anesthetist to maintain and regulate a physiologic state, it seemed worthwhile to explore the progress on the operative risk in patients with coronary heart disease.

Material

This report is based on a study of 5778 patients who had surgical procedures during the past 5 years at the New England Center Hospital.[2] The preoperative clinical findings were evaluated by members of the Department of Medicine and the ECG records were interpreted under the supervision of Dr. Heinz Magendantz, Cardiologist, New England Center Hospital.

The patients were divided into three groups: Group I — 517 patients with known coronary heart disease; Group II — 1107 patients with no history of coronary disease, but with abnormal non-specific ECG's; Group III — 4154 patients with no clinical evidence of heart disease. Sixty per cent of the operations were major procedures and forty per cent were minor. The major procedures consisted of intra-abdominal, intrathoracic, and extra-abdominal operations, whereas the minor procedures were cystoscopies, extremity operations, etc. The ages of the patients ranged from 40 to 90 and were classified into decades. The mortality rate of the three groups was corrected for ages.

Results

There was a total of 15 postoperative deaths from all causes in the series of 517 patients who had coronary heart disease, an incidence of 2.9%. (See Table I).

In the group of 1107 patients who had no known coronary disease, but with abnormal ECG's, the postoperative mortality was 3.6%. The postoperative mortality rate in the patients with no heart disease and normal ECG's was 2%.

Table I
Operative Mortality 1949-53

Status	Pts	Total Deaths	
Coronary Heart Disease	517	15	2.9%
Borderline (ECG)	1107	39	3.5%
No Heart Disease	4154	86	2.0%
TOTAL	5778	140	2.4%

The analysis of the principle cause of death is shown in Table II.

Table II

Causes of Postoperative Mortality 1949-53

	Status No. Patients	M.I. or Cong. Fail.	Pul. Embolus	Surgery—Pre-existing Disease
Coronary Heart Disease	517	6(1.2%)	2(0.4%)	7(1.3%)
Borderline ECG	1107	7(0.6%)	5(0.4%)	27(2.4%)
No Heart Disease	4154	4(0.1%)	14(0.3%)	68(1.6%)
TOTAL	5778	17(0.3%)	21(0.34%)	102(1.8%)

It was found that the postoperative mortality rate due to cardiac causes in patients with pre-existing coronary disease was 1.2% as compared to 0.1% in the patients without preoperative evidence of heart disease. These results were statistically significant.

The influence of the duration of the operation on the postoperative mortality rate is shown in Table III.

Table III

Duration of Operation by Postoperative Deaths

Duration	1 Hr.	1-3 Hrs.	3-5 Hrs.	5+ Hrs.
No. Operations	166	230	95	26
No. Deaths	4	5	3	3

It was found that the standard error of the difference between the operative procedures lasting over 3 hours was less than 2 times the difference than the operations requiring 1 to 3 hours. The length of time of anesthesia and surgery did not apparently influence the postoperative mortality rate.

Inhalation anesthesia was used in all cases requiring intraperitoneal, intrathoracic, or major extraperitoneal operations. Spinal and regional anesthesia was used only for perineal and lower extremity operations. Cyclopropane was administered in 54% of the cases as compared to ether 8%, thiopental + N_2O + O_2

plus muscle relaxant 16%, and thiopental + N_2O + O_2 22%. There was no statistical difference in mortality rate related to the anesthetic agent.

The influence of a specific elective major operative procedure was evaluated. Six per cent of the intra-abdominal procedures were cholecystectomies. A comparative analysis of the results following a cholecystectomy was made among the three groups of patients. There was no significant difference in the postoperative results in the three groups.

Comments

There are many reports stating that cyclopropane should not be administered to patients with coronary disease because it favors a high incidence of arrhythmias. A recent investigator[3] has shown that an elevated arterial carbon dioxide tension is the causative factor in producing arrhythmias and is not due to a toxic effect of cyclopropane on the myocardium. Our own findings are in agreement with those of Johnstone's[3].

Our results indicate that the risk of operation in patients with coronary disease is only slightly greater when compared to patients without heart disease of the same age group. This is made possible only when measures are taken to avoid myocardial ischemia.

The factors that may precipitate a coronary episode during or following an operation are as follows:

A. Circulatory Depression:

The major complication of deep levels of anesthesia is circulatory depression. Systemic arterial hypotension during ether anesthesia is mainly due to a direct myocardial depression.[4] During high spinal anesthesia it is due to a decrease in cardiac output and total peripheral resistance.[5] During deep pentothal or cyclopropane anesthesia the chief circulatory disturbance is a disproportionate reduction in cardiac output.[6,7] These recent studies have shown that deep surgical anesthesia produces a deleterious effect on either the myocardium or peripheral circulation. These changes rarely occur during light levels of anesthesia.

B. Respiratory Depression:

Deep surgical anesthesia is also accompanied by depressed ventilation. This impedes the excretion of carbon dioxide and leads to a taste of respiratory acidosis. Toxic levels of carbon dioxide may ensue and predispose to cardiac arrhythmias and postoperative hypotension.

C. Hypoxia:

The most frequent consequence of oropharyngeal obstruction and laryngeal spasm during anesthesia is hypoxia. Other causes of hypoxia are a decrease in the inspired oxygen tension, arterial hypotension, depressed ventilation, and shock.

D. Shock:

Shock, no matter how it is produced, may lead to the development of not only a single, but often multiple fresh coronary occlusions in the elderly patient, particularly those showing evidence of coronary arteriosclerosis.

E. Miscellaneous Factors:

Straining, bucking, and coughing during the induction of anesthesia impede the venous return of the blood to the heart, which predisposes to acute hypotension. Any of these complications will lead to impairment of the coronary blood flow. Cardiac rate is usually increased during such conditions. When this occurs the diastolic filling of the heart is reduced, and results in a diminished cardiac output and coronary blood flow.

These complications tend to increase the work of the heart. The combination of these factors are additive and may eventually precipitate a myocardial infarction. They can be avoided by the rapid and smooth anesthetic induction with thiopental plus muscle relaxant, followed by endotracheal intubation. The use of muscle relaxants permits the maintenance of light levels of anesthesia.

An anesthetic state necessary for major surgery can be maintained without incurring the factors that might precipitate a coronary episode provided the patient's respiration is actively "controlled". Ventilation is controlled by the anesthetist squeezing the anesthesia bag at a definite rate and rhythm in order to keep the mean airway pressure within physiologic levels. With this method a minimum of the primary anesthetic agent is required, alveolar ventilation is kept within physiologic ranges, and the circulation is not depressed. The crucial safety factors involved in anesthesia of all types are: control of the total amount of the anesthetic agent or agents administered, high oxygen saturation, prevention of accumulation of carbon dioxide in the blood, and adequate blood replacement.

However, it would be unfortunate if physicians would gain the impression that patients with coronary disease are especially safe operative risks. They are safe risks only when they are considered unsafe. This implies close cooperation among the internist, surgeon, and anesthetist, and the results obtained in this study are attributed to this cooperation.

Conclusion

The postoperative mortality rate from all causes in 517 patients with coronary heart disease was 2.9% as compared to a rate of 2% in 4154 patients with no clinical evidence of heart disease. The death rate primarily due to cardiac causes following surgery was 1.2% in the group of patients with coronary disease as compared to a rate of 0.1% in patients with no heart disease.

Although there is no significant difference in the total death rate among the three groups, it is evident that the risk of myocardial infarction following surgery is somewhat greater in patients with coronary disease, but not as great as reported by others.[8,9,10]

The magnitude of the risk as shown by this study should not contra-indicate necessary surgery providing the proper precautions are taken during the administration of anesthesia to prevent the impairment of coronary blood flow and oxygenation.

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Diamox in the Treatment of Congestive Heart Failure Resulting from Cor Pulmonale

By William B. Schwartz, M.D., Arnold S. Relman, M. D., and Alexander Leaf, M. D.,
New England Center Hospital, Boston

Seventeen patients hospitalized because of severe congestive failure due to cor pulmonale were treated with Diamox.

A large diuresis and corresponding clinical improvement were observed in approximately half the trials, with an average weight loss of 15.5 pounds in five to twelve days of treatment. The remaining cases lost little or no weight and showed no clinical improvement. Most patients became slightly more acidotic as the result of treatment. Blood pCO_2 usually did not change significantly.

The only difference noted between the responsive and unresponsive groups appeared to be the initial level of blood bicarbonate, which was slightly higher in the patients who responded to treatment. The physiological factors determining the renal and metabolic effects of Diamox in edematous patients with and without respiratory acidosis have been discussed in the light of current theory.

PULMONARY EMBOLISM

Recognition Of Phlebothrombosis And Prevention Of Pulmonary Embolism In Urologic Patients

Culp, O. S., et. al., J. Urol. 68:845, 1952

Pulmonary embolism continues to be a problem despite early ambulation and various prophylactic measures. The antecedent phlebothrombosis of leg veins, which most pathologists agree is the source of emboli large enough to cause sudden death, must be diagnosed early. Elevated temperature is an important warning symptom. Many patients suddenly become extremely apprehensive at or about the time phlebothrombotic symptoms develop. Perhaps the most significant sign of early phlebothrombosis is tenderness of the legs. Prompt diagnosis enables institution of appropriate therapy at the most opportune time.

Henry Ford Hosp.

Clinical Clippings, December, 1952.

ANESTHESIA

Trilene As An Adjuvant Anesthetic Agent With Nitrous Oxide And Oxygen For Prolonged Dental Anesthesia

Yein, C. S., et. al., Bull. Northwestern U. Med. School 26:180, 1952

Frequent use of electric drills during pedodontic procedures precludes use of ether, the safest of all anesthetic agents. Trilene* (trichloroethylene), now widely used in Great Britain and Canada, is nonexplosive when used in concentrations suitable for anesthesia and possesses marked analgesic properties. Trilene was employed with nitrous oxide and oxygen to anesthetize 25 patients undergoing difficult dental procedures. In the majority of instances the respiratory rate and pulse rate were not materially affected. Few patients experienced postoperative nausea.

**Trilene should not be used in a closed system with soda lime.*

Clinical Clippings, September, 1952.

(Continued from Page 750)

This chart purposely limits itself to tumors and omits the various cysts of the ovary which are a subject in itself.

Two Categories

I have divided the ovarian tumors into those which are common to most organs of the human body and those which are specifically ovarian in origin. As you can see from the chart, the ovary is subject to all the other ills of humanity, namely such tumors as occur in most tissues; for example, lipomas, fibromas and ordinary cystadenomas. On the other hand, there are a number of specific tumors which only occur in the ovary.

Some of these have hormonal activities and they are marked by a star on this list. Many of these have been adequately discussed from the clinical side by Dr. Landis and I will not repeat his remarks here. Of unusual interest are the tumors which are common to the testicle and the ovary.

Teratoma

There is first the teratoma, commonly known as dermoid cyst in the ovary, which is nearly always benign in the ovary, and nearly always malignant in the testicle.

The malignant teratoma of the ovary is extremely rare. The teratoma of the ovary has one more peculiarity, that it can produce a tumor within a tumor. A number of carcinoid tumors have been observed within the intestinal or bronchial structures of these teratomas. The other tumor which the ovary has in common with the testicle is the disgerminoma.

I would like to call your attention that when Robert Meyer classified this tumor it was spelled with a "dis" to indicate the double nature of this tumor and its ability to appear in male and female gonads.

To spell the tumor with a "dys" should be frowned upon. The tumor, although histologically identical in both organs, has a considerably worse prognosis in the male than in the female.

Summary

In summary, then, we have the case of a 13-year-old-female who became acutely ill due to a twisted ovarian mass which on surgery proved to be a disgerminoma of the ovary.

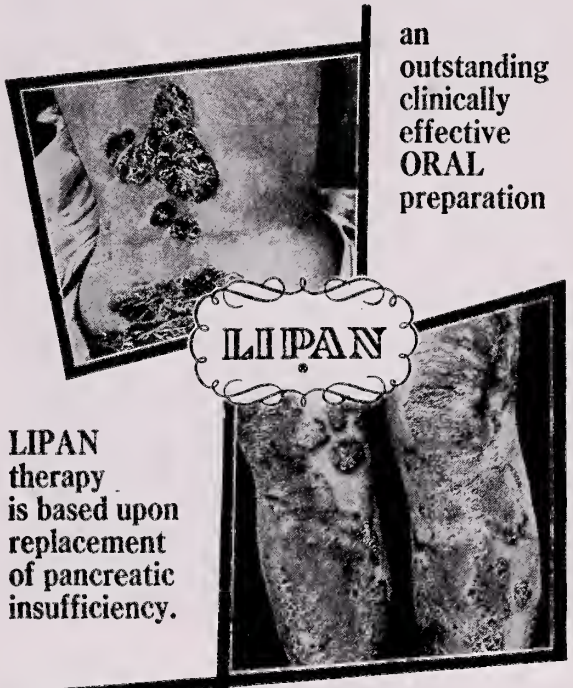
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